

Case Study

Douai Tramway

Mexphalte C - used to seamlessly bind joints along 12km platform for new tramway in Douai, France



Shell Bitumen played a key role in the construction of the city of Douai's new tramway system. A brand new 12 km long concrete platform was a major undertaking and the successful binding of joints was critical to the success of the project.

Shell Mexphalte C Joint P3J binder has been used to create a strong durable platform that, despite the many joints that run along its course, will withstand both the test of time and heavy traffic. Colour blending has also helped to create a seamless appearance.

Strong joints and a seamless appearance prove a winning combination

Critical Success Factors:	<ul style="list-style-type: none">- Strength, elasticity and flexibility- Strong resistance on cement- Strong adhesion on variety of joints- Colour blending to create a seamless appearance
Application:	Light railway system – 12 km concrete platform
Volume:	500 tons of Shell Mexphalte C
Product family:	Shell Mexphalte
Product grade:	C Joint P3J
Client:	City of Douai
Contractor:	Eurovia
Project Engineer:	Ingerop



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Tramway for the future

Douai is a bustling town of around 42,000 inhabitants, approximately 25 miles from Lille in Northern France. The City has witnessed increasing traffic flows year on year and as part of its overall traffic management plan, it has returned to its roots with the reintroduction of the tramway which was dismantled 55 years ago.

The new tram is a hybrid between a traditional bus on wheels and a traditional tram that is guided magnetically. There are two versions: a short tram of 18m to accommodate 120 passengers and a 24m version to carry up to 180 passengers.

The new concrete platform provides easy access to all members of the community – the disabled, the elderly and young children in prams.

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A seamless appearance

The platform is 250mm thick and 3-6.5m wide and at over 12km in length it inevitably incorporates many different types of joints: construction joints every 5 metres, expansion and contraction joints. The specification called for a product that shows good resistance on cement, particularly when exposed to repeated heavy traffic.

In addition, the client required the joints to look seamless; Shell Mexphalte C Joint P3J was ideal because of its colour blending properties: a cement-coloured joint was obtained by sanding with grey sand.

A joint effort

A two-component product has traditionally been used for this type of work where strong joints are required. Shell Mexphalte C Joint P3J proved to be a robust alternative as it offers excellent resistance to deformation of the roadbed due to wheel passage.

Approximately 27 tonnes of product in all will be laid over the course of three years. Three types of joints were made using Shell Mexphalte C Joint P3J:

- Contraction joints every 5 metres
- Longitudinal joints on the concrete platform
- Expansion joints, 2 cm on each side of the platform, filled first with soft Isorel throughout the whole depth of the joint.

Tried and tested

Shell Mexphalte C Joint P3J was applied hot and proved to be sufficiently flexible to withstand challenging weather conditions during application, being applied under humid conditions.

It has also withstood high-pressure water jet cleaning of the cracks and air blowing of the cracks.

Shell Mexphalte C Joint P3J complied perfectly with all of the product specifications, providing perfect adhesion on the cement slab without primer.

Future plans

The first line of the tramway is now complete and is soon to be commissioned. The second phase is currently being planned and is scheduled for 2010-2012. The third phase of work will extend the line even further, dramatically changing the travel scene in the city forever.

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