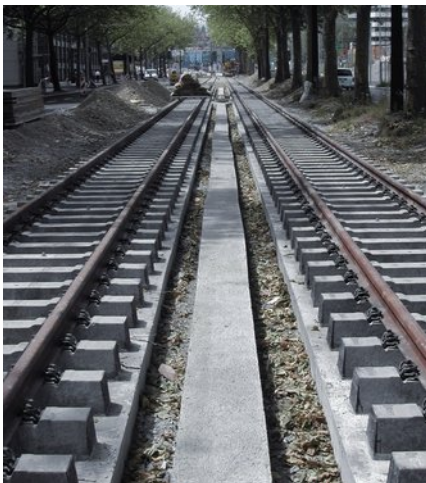


Reference

Glattalbahn, Zurich

Casting a solid railway basement using low-shrinkage concrete (Concretum® D-ZERO) and high modulus polymer fibers (Concretum® SUPERFIBER).



Tracks on solid railway basement



Elevated and aligned track units

Initial Status

The Glattalbahn is connecting the centre of Zurich with important developing areas close to the city's periphery.

For the track construction the contracting consortium has developed a new procedure: The sleepers are directly suspended by the solid railway basement made of concrete. Finally the construction is covered by gravel lawn, which results optically in a "green railtrack". The trackway consists of Vignol tracks mounted on precast concrete sleepers. This track system is elevated and aligned. Afterwards concrete is casted beneath it to form the solid railway basement. To make this solution an efficient and economical one, steel bar reinforcement as well as complicated joints must be omitted.

Facts

Products:
D-ZERO
SUPERFIBER 40/8

Project duration:
2006 to 2010

Authority:
Verkehrsbetriebe Glattal
(VBG)

Ready Mix Concrete:
HASTAG (Zürich)

Contracting Consortium:
GOB Glattalbahn
(c/o Walo Bertschinger
AG)





Solution

The concrete used for the solid railway basement must provide the possibility to cast a monolithic slab without joints and without steel bar reinforcement. This can be guaranteed only if concrete shrinkage is low and if an efficient cracking control is provided by other means.

Due to these requirements Concretum® D-ZERO and a reinforcement with Concretum® SUPERFIBER 40/8 (dosage: 0.6 kg/m³) have been chosen by the consortium.

With this combination shrinkage cracking can be avoided.

To replace expansion joints simple dividers were used to initiate predetermined cracking. Thanks to the choice of Concretum® products the solid railway basement could be built in an economical and durable way.

