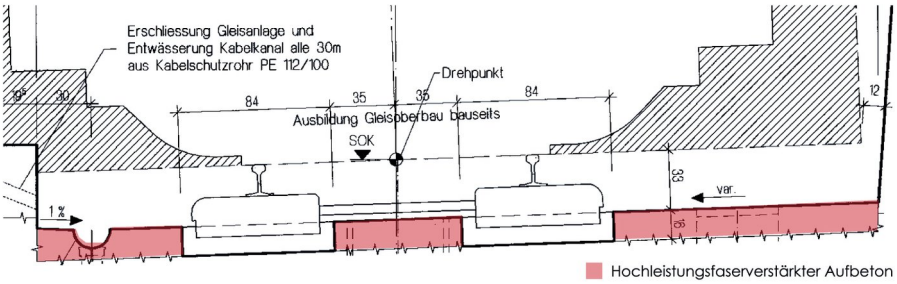
concretum
Smarter than Concrete

Reference Engineering

Increase of Capacity Altstetten-Süd/ZH



Problem and task

At the sub-crossing construction "Increase of capacity Altstetten-Süd" in Zurich the bottom plate should - for logitical reasons - be built using two layers. For the upper layer (screed) a type of concrete should be developped with which a conventional reinforcement and connecting reinforcement (or dowelling) to the existing concrete would be unnecessary.

Requirements to the concrete:

- Element length: 12 m, element width: 70 to 150 cm, max. slope: 6%.
- Force transmission only over the roughness in the contact surface, no reinforcement.
- High frost resistance, high durability.

Solution

- Development of a shrinkage-optimized binder mixture.
- Integral development of a concrete formulation with high-efficiency plastic fibers.
- Definiton of the important material properties and numerical simulation of the material behaviour (shrinkage, cracking).
- Optimising of the concrete formula and development of an object- and material-specific curing concept.
- Tests in advance and attendance during the realization.

Judgement

The project was finished sucessfully and on time. The suggested solution proved its worth both from the technical and the economical angle.

Facts

Duration of the product:
January to July 2002.

Building owner:
SBB

Client:
Locher AG, Zurich

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