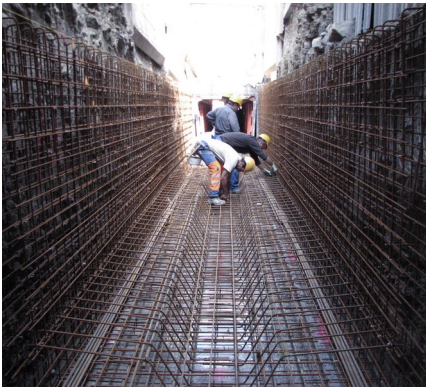


Reference

Repair of Sewer Rebwiesenstrasse Winterthur

Monolithic sewer with low-shrinkage concrete Concretum® D-ZERO



Reinforcement



Completed construction

Product:
D-ZERO

Project duration:
2008

Concrete supplier:
HASTAG (Zurich), Werk
Winterthur

Building contractor:
Zani AG, Winterthur

Authority:
Stadt Winterthur
Tiefbauamt

Engineers:
Hunziker Betatech AG,
Winterthur

Initial status

Within the repair of a sewer in Winterthur it was necessary to construct a new element of approximately 160 m in Rebwiesenstrasse. The new sector was intended to be built as a rectangular cross-section in concrete. The aim was to develop a structural design which would be as simple as possible and highly durable at the same time. The sulphate resistance was defined as the main class of exposition of the concrete. The concrete must meet the demands of class XA2.

Solution and evaluation

To realize a monolithic solution without expansion joints, the low-shrinkage concrete Concretum® D-ZERO was chosen. Cracking can be avoided thanks to its low shrinkage. A moulding system of 12 m was used. The complete rectangular cross-section including footwall, walls and ceiling could thus be built in just one workstep. The consistency of the concrete was set up in a way which allowed casting the surface of the footwall with the necessary transverse slope of 10%, despite the hydrostatic pressure put on the footwall by the higher situated fresh concrete in the walls. No further measures of sealing were used in the joints. The reinforcement ratio and the low shrinkage guarantee that the joints remain closed. A ceramic semi-pipe was put



in the middle of the footwall and the remaining concrete was finished with a highly abrasive resistant sand. This increases the surface durability. No further layers were applied. The sulphate resistance of the concrete was controlled and observed during the construction process.

