Strains and displacements in a new type of slurry wall: research field (2)

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EpsilonRebar: *Case Study*

The subject of the project was a slurry wall made of a new type of material: fibre-reinforced concrete mixed with the ground. As this technology must be carefully checked before use, EpsilonRebars were used for this purpose. The structural performance of the wall was monitored during the deepening of the excavation as well as during the mechanical load tests. Thanks to Nerve-Sensors, it was possible to detect cracks but also to calculate horizontal displacements.

Benefits of application

- Distributed measurements of **strains, cracks and displacements** at the same time
- Full **deformation and temperature control** along the entire length of slurry wall
- Simultaneous analysis of **both compression and tension** zone
- Measurements during **deepening of the excavation** and mechanical **load tests**

Example results

The slurry wall was loaded using hydraulic jackets. The figure shows example horizontal displacement profiles calculated based on strains measured by EpsilonRebars during subsequent load steps. The structural performance of the Nerve-Sensor system was proved up to the total failure point of the wall. A very good agreement with reference techniques was obtained.

12 800 measurement points

128 m of sensing path

16 x EpsilonRebar

construction & load tests

project **partner**: