

## EPC SKI SP15-Jet Grouting

Ski, Norway

- Execution of Jet-grouting under and around existing sheet pile wall.
- Jet-grouting in sensitive clays and quick clays.
- Achievement of high requirements regarding compressive strength, drilling deviations and environmental footprint by application of precutting, measurements, diameter control and treatment plant.



### The project

Bane Nor - Norwegian State Railway Company - has started to connect the cities of Oslo and Ski by rail in the last decade.

The SP15 area in Ski is part of the planned central station building. The aim of the work was to seal a permeable soil layer under the sheet pile wall and to seal open sheet pile wall areas.

## The challenge

- Achievement of large jet-grouting diameter and high strength in cohesive soils.
- Constrained site conditions and environmental requirements.
- Drilling depth up to 20m combined with high drilling deviations.

## The solution

- Application of ACI-method for diameter control and verification of jet-grouting parameters and precutting procedure.
- Backflow treatment by filter press to achieve the environmental requirements and avoid backflow ponds due to constrained site conditions.
- Analysis of drilling deviation measurements, design of additional columns and pre-drilling with water hammer was used to achieve sealing requirements.

## Project facts

### Owner(s)

Bane NOR

### Keller business unit(s)

Keller Geoteknikk AS  
Keller Grundbau GmbH

### Main contractor(s)

OHL Norway

### Engineer(s)

Project Manager - Eloy Moreno Gomez  
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### Solutions

Bearing capacity / settlement control

### Markets

Infrastructure

### Techniques

Jet grouting

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