

## Kvellandsbru E39 - Lyngdal

Lyngdal

The foundation contains 24 bored piles with a max. length of 22 m. The piles have a diameter of 1.5 m, drilled 0.5 m into bedrock.

Temporary segmental casing, no DTH hammer (Down-The-Hole).

Cross Sonic Logging and core drilling to prove quality of our works.



### The project

The Kvellandsbru project is part of the extension of E39 highway between Kristiansand and Stavanger. The bridge shall connect two tunnels between Lyngdal valley. The bored pile foundation shall carry the resulting loads of the future bridge.

## The challenge

- Difficult soil conditions including large sized blocks with diameter more than one-meter, high stiffness of soil and high ground water level.
- Prefabrication and Transport of overlong reinforcement cages on site.
- Complex site logistics and limited working space next to Lygna-river.

## The solution

- Using rock auger and core barrel to drill through blocks, drilling bucket for sand and gravel and casing oscillator to overcome high skin friction.
- Due to high abrasiveness of the soil, the drill equipment, had to be adapted to the conditions. New developed special consumables teeth and round shank chisel were part of this adaption.
- Checking the load capacity of the existing access bridge.

## Project facts

### Owner(s)

Nye Veier

### Keller business unit(s)

Keller Geoteknikk  
Keller Grundbau

### Main contractor(s)

Implenia Norge AS

### Engineer(s)

Main contractor's Project Manager:  
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### Solutions

Heavy foundations

### Markets

Infrastructure

### Techniques

Bored piles / drilled shafts

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