

# Soilmec ST-120 – Deployment Analysis

## Tunnel Homolé, CZE

### Graduate



Rahel Limacher

**Introduction:** The Tunnel Homolé is part of a new highway construction project in the Czech Republic. The highway will remedy the high traffic volume on the local roads and in the settlements in the region and improve the connection between the Czech Republic and its neighbour Slovakia. The Tunnel Homolé consists of two tunnel tubes with two lanes each. Its final length will be about 500 m. Due to difficult geology and a minimal overburden the mining operations are complicated and the ground has to be improved in order to be mechanically excavated.

**Objective:** The Thesis compares the chosen pipe umbrella method and the method proposed in the reference project (vertical jetting). Vertical jet columns are constructed from the surface with a specialised rig or with a jetting attachment. Vertical jetting works on the following principle regardless of machinery:

- Drilling to necessary depth,
- Rotation and extraction of drill rod with simultaneous injection.

Pipe umbrellas are constructed by drilling pipes into the tunnel profile. If necessary the ground between the inserted pipes can be additionally secured with injections. The pipes used in the Tunnel Homolé are 15 m long and require specialised machinery to be installed.

Marti a.s. is using its good relations to its mother company Marti TUAG to get access to the large drilling rig, the Soilmec ST-120.

**Result:** The construction of the pipe umbrellas from the inside of the tunnel protects the surface of the Homolé-hill and its flora and fauna. The visibility of the tunnel face allows for modifications of the

supplemental securing measures depending on the geology.

The use of the Soilmec is more straightforward and cost-efficient than commissioning a subcontractor to construct the vertical jet columns. The support and instruction of two Soilmec operators from Switzerland is considered very valuable.

**Mechanical Excavation in the Tunnel Homolé**  
Own presentment



**Excavation Pit of the Tunnel Homolé**  
Own presentment



**Soilmec deployed in the Tunnel Homolé**  
Own presentment



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### Subject Area

Bauausführung

### Project Partner

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