Reference

# Sisikon Tunnel, Construction Lot 200, N4 Neue Axenstrasse







## SHORT DESCRIPTION

The construction of the Sisikon Tunnel marks the completion of a key section of the new Axen Road. This road will connect to the existing N4 national highway in Ingenbohl and Gumpisch and is intended to relieve the village of Sisikon of through traffic. Construction Lot 200 comprises the approximately 4.4-kilometer-long tunnel, including its portal areas, as well as the Gumpisch exit tunnel.

## THE PROJECT

The new Axenstrasse will connect to the existing N4 national highway in Ingenbohl and Gumpisch. In between, a new section of road will be built, featuring the 2,891-meter-long Morschach Tunnel, the 4,442-meter-long Sisikon Tunnel, and the short open section at Ort between the two tunnels.

Construction Lot 200 encompasses the construction of the Sisikon Tunnel, including its portal areas, as well as the construction of the Gumpisch exit tunnel. Tunnel and adit work is being carried out from several access points: Dorni, Ort,

Gumpisch, and Buggi. This allows different sections to be driven in parallel.

The main tunneling for the Sisikon Tunnel is being carried out via the Dorni intermediate access point. In addition, counter-tunneling in the Sisikon Tunnel is being performed from the Ort portal. Counter-tunneling for the Morschach Tunnel is also being carried out from this location.

At the Gumpisch portal, the Gumpisch exit tunnel is being constructed. Another access point is located in Buggi, from where excavation for the Buggi access adit is taking place.

## SERVICES IN DETAIL

Specifically, the following major tasks will be carried out:

- Excavation and lining of the Sisikon Tunnel, including lay-by areas with WELK installation and intermediate ceiling
- Excavation of the Morschach Tunnel in the opposite direction
- Excavation and lining of the Gumpisch exit tunnel
- Open-cut sections of the Sisikon Tunnel and Morschach Tunnel
- Excavation and lining of the Ort and Buggi ventilation centers, as well as excavation of the Petersort ventilation center
- Excavation and lining of central ventilation stations 1 through 4
- Excavation and lining of the Petersort exhaust shaft and excavation of the Buggi exhaust shaft
- Excavation of the Petersort and Buggi access adits
- Dorni access adit, including preliminary cut and open-pit mining
- Gumpisch pre-cut with Gumpisch gallery, including foundation
- Construction and demolition of the boat dock and the silo facility, including foundations

## CHALLENGES

- Vibrations must be kept to a minimum. The material handling plan for the Dorni access tunnel includes underground crushing facilities as well as conveyor belt, silo, and ship-loading facilities.

## SUSTAINABILITY

- **Hypex Bio is used in the main tunnel drives at Dorni** (SiTu North and South) as well as in the Gumpisch exit tunnel.
- Only eco-friendly oil is used.

## FURTHER INFORMATION

**Construction Methods**

The two tunnel drives for the Morschach and Sisikon tunnels will initially be excavated using the MUF method in four stages each, protected by a pipe shield. The remaining excavation work will be carried out using blasting. Preliminary cuts will be made at the tunnel portals. The vertical ventilation shafts will be excavated using conventional methods. The WELK elements will be prefabricated. The interior lining will include, in part, floor concrete, the installation of the WELK elements, the interior vault, the intermediate ceiling, and the concrete construction of the control centers. In addition, the open-cut tunnels and the Gumpisch gallery will be constructed.

**Website**

## FACTS

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| **Location** | Sisikon , Switzerland |
| **Status** | Under construction |
| **Construction volume (value of our services)** | 433 M CHF |
| **Blasting method** | ✓ |
| **Tunnel length** | 4442 m |

## SERVICES

Tunnelling

Transport tunnels

https://implenia.com/en/references/detail/ref/sisikoner-tunnel-baulos-200-n4-neue-axenstrasse/

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