



■ Excavations



Reference Details:

Owner

Schiliftgesellschaft
Sölden-Hochsölden,
Ötztal +++ **Design of
Excavation** Dr. Heiner
Bertle,

Ingenieurkonsulent für
Techn. Geologie,
Schruns +++

Contractor for Excavation

Bietergemeinschaft
ILBau GmbH-STUAG
GmbH, Innsbruck +++
**Execution of
anchor works** STUAG
Bau GmbH Abt. Tiefbau,
Wien

DSI Services Supply of
157 pieces of
DYWIDAG Permanent
Strand Anchors 4-0.6"
St 1570/1770 (grade
250), service load
500kN, with 20
adjustable; Supply of
electrical isolated
anchors including
measurements of
resistance under
supervision of DSI
Munich.



Excavation of parking garage in Giggijoch, Soelden, Austria

The ski lift venture Soelden-Hochsoelden in the Tyrolean Oetztal constructed an 8-lane gondola system, which transfers skiers and snowboarders in 7.4 minutes from 1,377m to 2,284m about sea level. The new lift increased the transport capacity to 2,800 people per hour, a threefold increase when compared with the old 4 lane gondola. To cope with the increased number of snow vacationers, an increase in parking space was crucial. The venture planned a parking garage with six levels for 570 cars, thus increasing the overall capacity to 1,100 cars.

The existing steep slope of 40 degrees had to be cut up to a height of 18m. The slope stabilization consists of an anchored pile wall with cast in place concrete caissons. The average length of the piles is 16m with a diameter of 900mm and four cast in place stringers (whalers).

The retaining wall is anchored with 157 permanent DYWIDAG strand anchors 4-0.6" St 1570/1770 (grade 250) with an anchor length of 15 to 25m. 20 anchors are furnished with a "nose disc", which provides for verification and adjustment of the tie back force.

The unique feature of the project is the first application of the so-called "electrical isolated" anchors which are installed according to the EURONORM EN 1537. "Electrical isolation", according to the EURONORM requires undamaged physical encasement of the corrosion protection cover of the anchor.

The specifications of the EURONORM include the following:

- Continuous, unspliced and durable PE corrugated sheathing
- Additional sealing covers at anchor toe
- Isolation of the anchor head and wedge plate

The EURONORM requires that a test be conducted to measure the electrical resistance in order to verify the effectiveness of the applied corrosion protection system.

The electrical resistance test #1 can be performed in two stages

Stage 1a - The integrity of the sheathing: The integrity of the PE sheathing is tested at various stages of assembly prior to stressing at the anchor, i.e.

- after installation of the anchor into the bore hole
- after the grouting
- after acceptance test

Stage 1b - Electrical isolation of the anchor to the ground and to the structure:

- stressing the anchor
- injection of the anchor head
- at a random point in the service life of the anchor

An electrical resistance test # 2 will only be performed when the test after stressing indicated a resistance less than 0.1 M-Ohm.

This will ensure that no direct contact between anchor head and reinforcement of the retaining structure exists. Special care was taken when the preassembled anchors were coiled and loaded for shipping as well as during storage before and after shipping.

The exposed surfaces of the anchor head are galvanized. The measurements of the electrical resistance test and results according to the Eurocode justified the chosen anchor type and demonstrated the care taken during installation by the special contractor.

www.dywidag-systems.com