

**Tunneling****Reference Details:**

**Owner** Mölltaler Glacier  
Express GmbH & Co. KG  
**+++ General**  
**Contractor** ILBAU  
Spittal/Drau

**DSI Services** Supply of  
15800 DYWI® Drill  
Hollow Bars dia. 20mm;  
Geotechnical consulting.

**Tunnel works for longest glacier express with DYWIDAG rock bolts****Mölltaler Glacier, Carinthia, Austria: Glacier cable railway**

The world's longest underground cable railway (length 4,796 m) provides an all-year service to the glacier ski-region of Carinthia. The tunnel starts at an altitude of 1,225 m and exits 1,000 m higher, opening an all-year ski resort up to an altitude of 3,105 m. The glacier express has a capacity of 1,500 passengers per hour in both directions simultaneously.

The mountain's geology is mainly granite and slate in very good consistency with 90% being considered rock classification I and II. The 4.5 m diameter tunnel was driven with a Jarva type tunnel boring machine. Tunneling progressed at an average rate of 22 m/day with a maximum of 60 m/day.

More than 15,800 Ø 20 mm (7/8") rock anchors retain the entrance sections of the tunnel. The average SN-anchor bond length was 2 m long and grouted with cement. In addition expansion-shell anchors were installed for immediate protection. Both plastic and metal expansion shells were used. In October 1996 the tunnel was completed after one year of drilling. The geotechnical consulting as well as the supply of all anchor material was awarded to DSI Austria.