

Poland



Name: Subcommittee of Underground Construction of Polish Committee on Geotechnics (Polish Tunneling Association)

Type of Structure: Non profit, open association

Number of Members: 64 members, 5 corporate members

ASSOCIATION ACTIVITIES DURING 2022 AND TO DATE

Representatives from Poland were present at ITA General Assembly on September 4th 2022 and September 7th in Copenhagen. Monika Mitew-Czajewska was elected as a Member of the Executive Council of ITA for 2022 – 2025. Anna Siemińska-Lewandowska was a Member of Scientific Committee WTC2022 and chaired one of the technical sessions. Monika Mitew-Czajewska (treasurer) is a member of WG20, Anna Siemińska-Lewandowska (president) - WG15, Bartłomiej Dziuban and Dymitr Petrow-Ganew – WG14, Maciej Ochmański – WG2 and WG22, Jerzy Lejk - WG3, Bartłomiej Dziuban – ITAYM.

The Association organised two conferences – the 4th Polish Tunnel Forum (live and digital) on 30th June 2022 in Wrocław and Geotechnics and Underground Structures, Cracow, 20th – 22nd June 2022 (live and digital). During the 4th Polish Tunnel Forum the Members of the ExCo presented lectures: Tarcisio Celestino “Carbon footprint in tunnel construction” and Olivier Vion “World trends in tunnel construction”.

CURRENT TUNNELLING ACTIVITIES

Construction of the 2nd metro line in Warsaw, extensions of the existing central section

- In a east-north direction three stations and 8km of twin single track tunnels were put into operation on September 22nd, 2022
- In a westerly direction two stations and 4km of tunnels were put into in operation from June 2022

Construction of the 3rd metro line in Warsaw

- Geological investigation along the route of TBM tunnels, construction method: EPBM + cut & cover.

Road tunnel under the Świna river in Świnoujście – north Poland

The 1.44km long tunnel will connect the islands of Uznam and Wolin. The



Road tunnel under the Świna river in Świnoujście

construction method is via a 13.46m diameter TBM with a completion date end of 2023. Slurry TBM boring works were completed in 2021. Two of the four emergency exits were constructed using ground freezing. Other finishing works (construction of ventilation ducts, technical ducts, emergency exits under the road slab) are in progress

Rail Tunnel in Łódź connecting Łódź Fabryczna and Łódź Kaliska stations

The length of the tunnel is 3km of twin track tunnel and 4.5km of single track/tube tunnels with two underground stations. The construction method TBM + cut & cover. Two TBMs – of diameters 13.04m and 8.76m started in 2021. Two stations are under construction, with 1000m of double track tunnel and 900m of single track tunnels are completed. Due date for completion is at the end of 2024.

Road Tunnel under Luboń Mały – south Poland

Over 2 x 2km of tunnel on the S7 motorway from Kraków to Zakopane (Polish skiing resort) has been in operation since December 2022.

Road Tunnel on the S3 motorway Bolków-Kamienna Góra – south Poland

2.3km of tunnel on the S3 motorway from Bolków to the state border. Design and build using the NATM method. The excavation works were completed in February 2022. Finishing works are in progress with a completion due date of 2024.

Two Road Tunnels on S1 motorway, the ring road of Węgierska Góra – south Poland

Two road tunnels (830m and 980m) on the S1 motorway to the south state boarder. The contractor will construct the tunnel via a design and build contract using NATM. Due date is in 2025.

Utility (storm water retention) tunnel along the Vistula River in Warasaw

A Microtunnelling project of 3.2m diameter and total length approx. 9km, with a completion date at the end of 2023.

Road Tunnels on the S19 motorway, Via Carpatia, Rzeszów - Babica

The project involves constructing 2,180m long twin tube TBM bored road tunnel on the S19 from Rzeszów to the state border. Construction works started at the beginning of 2023. Transportation of 15.4m diameter cutterhead and the rest of the TBM parts from Szczecin harbour by the Oder river to Opole and afterwards by road to the assembly site near Rzeszów posed a big challenge

Road tunnels on the north city ring of Cracow

The 12km long north city ring of Cracow S52 has three road tunnels (496m, 653m, 100m long), created by the cut & cover method, with one of the tunnels crossing under the river Prądnik, Due date for completion is at the end of 2024.

FUTURE TUNNELLING ACTIVITIES

Three road Tunnels on the S19 motorway, Via Carpatia, section Rzeszów - Barwinek

Three road tunnels (1.75km, 1.6km, 1.2km) on the S19 from Rzeszów - Babica to the state border. The conceptual design is underway. Construction period - 2023-2026.

Two Road Tunnels on the S7 motorway in Warsaw

Two road tunnels; 2 x 3 lines in each direction, currently in preliminary design.

Road Tunnel on the S6 motorway

A road tunnel on the Szczecin west city ring, under the Odra river, 5km long, with a construction method using a 14m Slurry TBM. The separate tenders for the building permit design and construction will be open in April 2023.

Eleven (11) rail tunnels – 12km in length on the rail route Podłęże-Piekiełko in south Poland

The environmental permit has been obtained and the design works are underway. Preparatory works and the design were completed in 2022. The construction and modernization is planned for 2023-2026.

2.5km long railway tunnel in Łódź on the railway line 85

A high speed train tunnel will connect the Central National Airport (under design) with Warsaw and Wrocław. Building permit design.

STATISTICS

1. Length of tunnels excavated

80% mechanized / 20% conventional during 2022

2. List of tunnels completed

II metro line east and west extensions, Warsaw. Road tunnel under Lubo Mały 2.3km, South of Poland. 2.1km long road tunnel Łagiewnicki – Cracow.

3. List of tunnels under construction

Roads tunnels: S3 under the Świna river, S3 Bolków-Kamienna Góra, S1 Węgierska Górka, S19 Via Carpathia, S52 North city ring for Cracow.

Railway tunnels: single track and double track Łódź.

Utility tunnels: storm water retention tunnel along the Vistula river, Warsaw.

EDUCATION ON TUNNELLING IN THE COUNTRY

Basics of Underground Structures (1st degree studies), Underground Structures I and II, Fire safety in tunnels – 2nd degree studies – Warsaw University of Technology, Faculty of Civil Engineering. Underground Construction (1st degree studies), Geotechnology of underground structures and tunnels, The impact of underground construction on surface and surrounding rock mass, Ventilation in selected underground facilities – 2nd degree studies – AGH University of Science and Technology, Faculty of Civil Engineering. Faculty of Civil Engineering, 2nd degree studies – Wrocław University of Science and Technology, Faculty of Civil Engineering; Tunnels and underground passages – 2nd degree studies – Cracow University of Technology, Faculty of Civil Engineering; Underground structures – (1st degree studies) – Silesian University of Technology, Faculty of Civil Engineering; Underground structures (2nd degree studies) – Białystok University of Technology, Faculty of Civil and Environmental Engineering.