Germany



Name: Deutscher Ausschuss für unterirdisches Bauen e. V. (DAUB, German Tunnelling Committee)

Type of Structure: Registered non-profit and restricted association (limited to 30 individual members)

Number of Members: 30 members

ASSOCIATION ACTIVITIES DURING 2019 AND TO DATE

Activities

- STUVA Conference '19, Separate Segments on "Tunnelling" and "Tunnel Operation", attended by more than 2000 participants and approx. 200 exhibitors, 26–28 November 2019, Frankfurt
- DACH-meeting (German, Austrian, Swiss Tunnelling Committees) in Switzerland (technical seminar and site visit)
- Meeting and inauguration of a European Underground and Tunnel Forum (EUTF, consisting of Austria, Belgium, France, Germany, Italy, Netherlands, Portugal, Spain and Switzerland)
- Regular Meetings of Tunnel Committee and Working Groups
- Several Meetings with workshops of Young Engineering Professionals "STUVA-YEP"

Working Groups

- Recommendations for contracts with low potential for conflicts
- Life-cycle costs calculation
- Face Support Pressure Calculations for Shield Tunnelling in Soft Ground
- Design, production and installation of segmental rings
- External communication of DAUB
- Digitization and Building Information Modelling (BIM) in tunnelling
- Selection of tunnelling machines (TBM)
- Planning and implementation of occupational health and safety concept on underground worksites
- Standardization needs for the design of underground structures

Publications (recently finished)

- Recommendations for the Life Cycle Costing of Road Tunnels
- Recommendation BIM in Tunnelling
- Recommendation for Gasket Frames in Segmental Linings

Publications of DAUB can be found in/on

- Journal "tunnel" (www.tunnel-online. info)
- German Handbook of Tunnelling ("Taschenbuch Tunnelbau", published annually)
- Recommendations are available for download from website (www.daubita.de, www.stuva.de); the majority is bi-lingual (German/English)

Future Activities

- Regular meetings with Austrian, Swiss and EUTF colleagues
- Munich Tunnel Symposium, 8 May 2020
- InnoTrans, Tunnel Forum, 22–24 September 2020, Leading int. trade fair for transport technology
- Sealing of buildings by injections; Information on afterwards sealing of concrete structures, geotechnical sealing injections, 4–5 November 2020
- STUVA-Conference 2021, Separate Segments on "Tunnelling" and "Tunnel Operation", 24–26 November 2021, Karlsruhe

CURRENT TUNNELLING ACTIVITIES

About 190km of traffic tunnels are under construction in Germany in 2019.

This year, the main activities relating to inner-urban rail tunnelling are taking



Fig 1. Length-related classification according to federal states for transportation tunnel projects under construction, with the number of tunnel projects given in brackets.

place in Munich, where some 13.8km of urban and underground tunnels are under construction at the turn of the year 2018/19. Due to the official start of construction for the second core S-Bahn route ('S-Bahn-Stammstrecke') the construction volume has more than doubled, although the excavation works haven't started yet. This is followed by Karlsruhe (4.7km), Frankfurt/Main (4km), Berlin (3.5km) and Stuttgart (2.9km). Further tunnel projects amounting to less than 2km are underway in Nuremberg, Hamburg and Dortmund.

- The main-line rail tunnels largely relate to DB Netz AG tunnelling works in and around Stuttgart. Of the tunnelling projects currently being implemented (a total of 119km), almost 51km are accounted for by the major project "Stuttgart 21 rail hub" and some 57km by the new Wendlingen–Ulm rail route. Further 9km of main-line tunnels are being constructed in conjunction with the upgraded/new Karlsruhe–Basle section. Currently, 32% of main– line tunnels are built by the classical shotcrete method, whereas TBMs are applied for 61% of the driven volume.
- The drive-up length in road tunnel construction in 2019 was approx. 39km throughout Germany. About 50% of the driven length was accounted for by the two southern federal states of Baden-Würtemberg and Bavaria. About two thirds of all road tunnels are built by underground methods. The shotcrete method predominates in the majority of those tunnelling projects.

FUTURE TUNNELLING ACTIVITIES

About 203km of traffic tunnels are projected but not yet started in 2019.

Compared to last year's figures, there has been a significant decrease in the





planning volume of inner-urban rail tunnels, mainly due to fluctuation in the awarding process. In this context, the high planned volume for the city of Munich, comprising a good 24km, is still conspicuous among the listed projects. Almost 9km of tunnels are being planned for the Hamburg Metro (partly at the pre-planning stage). Leipzig is engaged in preplanning 7km. Further tunnelling activities involving less than 3km are foreseen in the cities of Frankfurt/Main, Nuremberg, Berlin, Düsseldorf, Stuttgart and Dortmund.

- Regarding the planned volume of main-line rail tunnels, it should be noted that practically the half is accounted for by the tunnels approved for the new/upgraded Karlsruhe–Basle rail line (driven length: 19km). Further tunnels are planned in conjunction with the new/upgraded Rhine/Main–Rhine/ Neckar route (9km), the Nuremberg–Fürth rail line (7km) and the new/upgraded line Nuremberg–Marktreditz (5km).
- The planned volume of projected road tunnels (106km) has again decreased slightly, due primarily to a lack of awards. On account of the German state's revamped planning requirements, the scheduled volume has dipped considerably in recent years.

STATISTICS

See sections above, for detailed analysis, figures and tunnel lists visit: https://www.stuva.de?statistik

EDUCATION ON TUNNELLING IN THE COUNTRY

Many Universities and Universities of Applied Sciences offer numerous courses on tunnel related topics and provide extensive possibilities for interested persons (see e.g. MSc "Geotechnics and Tunneling", 4 Semester Mastercourse in German language at the Ruhr University Bochum, BSc Civil Engineering required)