

Turkey



Name: Turkish Road Association

Type of Structure: TRA is an open association. Its function is to promote, coordinate and spread studies and research in the field of roads, highways, motorways, tunnelling and other underground works.

Number of Members: As of January 1st, 2020, TRA has 504 members of which 439 are individuals and 65 are corporate members which represent Universities, Consultants, Contractors, Manufacturers and some of the other Governmental Organizations.

ASSOCIATION ACTIVITIES DURING 2019 AND TO DATE

The "2nd National Tunnelling and Underground Space Congress and Exhibition" was held on December 4th – 5th, 2019 at the Sheraton Ankara Hotel & Convention Center with the support of the Ministry of Transportation and Infrastructure and with the scientific and technical contribution from the General Directorate Highways, the Turkish Road Association (TRA – YTMK). The Deputy Minister of Transportation and Infrastructure Mr. Adil KARASMAILOGLU, General Director of Highways and chairman of the board of TRA, Mr. Abdulkadir URALOGLU gave their speeches in the opening ceremony. Representatives of several public and private organizations, NGOs, Universities and tunnel and underground sectors took part in the Congress. The total number of participants was more than 1000.

The exhibition, with 22 tunnel and underground sector companies, contributed in the sharing of knowledge and technology.

The Executive Director of ITA-AITES, Mr. Olivier VION and Member of the Board TRA and ITA Mr. Hamdi AYDIN, gave details of the ITA's activities and relations with TRA in their speeches.

Over the six sessions of the Congress, six invited speakers and 20 experts presented their works.

CURRENT TUNNELLING ACTIVITIES

New Zigana Tunnel

The 14.5km long New Zigana Tunnel project in Turkey is currently under construction. The two-lane tunnel will connect the Gumushane and Trabzon provinces in Turkey's north east, and will be located at an altitude of over 1,200m above sea level. The construction of the tunnel will replace the existing route over the Zigana Pass, which reaches an

altitude above sea level of 2,032m. The project consists of 2 x 14,500m long tunnels and 600m of connection roads. Upon completion of the tunnel, the existing road will be shortened by 8km.

Egribel Tunnel

A total of 10,286m of excavation and support works were completed in the 5,905m long twin-tube Egribel Tunnel.

Alacabel Tunnel

The Alacabel Tunnel connecting Konya and Antalya cities is a twin-tube, 7,360m in length.

Kirik Tunnel

The Rize and Erzurum provinces are being connected by the twin-tube 7,105m long Kirik Tunnel Project.

Kop Tunnel

When the 2 x 6,500m Kop Tunnel, on the Erzurum-Bayburt road, is completed access of the Gurbulak Border Gate to the Trabzon Port will be made easier.

The economic and social structures of the Black Sea, Eastern Anatolia and Southeastern Anatolia will be greatly improved.

Ilgar Tunnel

The Ilgar Tunnel is located on the (Ardahan-Cildir) Separation - Hanak-Damal Route. There are 2 x 4.9km long twin-tube tunnels within the project. With the completion of the Ilgar Tunnel, the route will be shortened by 5km.

Sertavul Tunnel

Sertavul Tunnel is a twin-tube, 3,300m in length.

Salarha Tunnel

A total of 4,231m of excavation and support works were completed in the 2,945m long twin-tube Salarha Tunnel in the Black Sea Region.

Pirinkayalar Tunnel

The 2,246m long single-tube Pirinkayalar Tunnel will connect the cities of Erzurum and Artvin.

Mediterranean Coastal Road Tunnels

The Mediterranean Coast Road between Mersin and Antalya is 446km long. This project includes 34 tunnels (39.8km). The construction of 16 tunnels (10,037m) has been completed to date.

Dolmabahce-Levazim Tunnel

The Dolmabahce-Levazim Tunnel is the first tunnel of the Dolmabahce-Kilyos Tunnels Project. The excavation works of this 3,872m long twin-tube tunnel are continuing. The design works of the remaining tunnels of the route are completed.

Dudullu-Bostanci Subway Line

The Dudullu-Bostanci Subway Line will be 14km long. The journey will take 21 minutes on the Dudullu-Bostanci Subway Line, which will have 13 stations. With a connection to be made at Kozyatagi Station, transfer to the Kadikoy-Pendik Subway Line will be provided.

ISKI Europe 2nd Region 2nd Part Wastewater Tunnel

A wastewater tunnel is being constructed to transfer wastewater from the Kucukcekmece Wastewater Pretreatment Plant to the existing Ambarlı Advanced Biological Wastewater Treatment Plant in Beylikduzu. Within the scope of the project, a wastewater tunnel with an i.d. of 2.2m and a length of 6,438.28m, and a shaft of 91m depth with a diameter of 7.5m are being constructing.

ISKI Kagithane-Sefakoy Drinking Water Tunnel

The ISKI Kagithane-Sefakoy Drinking Water Tunnel project consists of two lines. Line 1 which is 7.7km length between the Kagithane-Eyup (Munzevi) districts. Line 2 is 13.1km in length and is situated between the Islambey-Sefakoy districts. The 19.56km section of the 20.81km long water tunnel line will be excavated by TBM, the rest will be excavated using NATM or SEM.

Babakaya and Silvan Irrigation Tunnels

Within the scope of the Southeastern Anatolia Project, the Babakaya and Silvan Tunnels are being built to bring water from the Silvan Dam (under construction). The Babakaya Tunnel is

5,320m long, 7m i.d. with twin-tubes. The Silvan Tunnel, which will carry 212m³ of water per second, is being constructed as a single tube with a length of 13.4km and a diameter of 10m. The water in the dam will be transferred to the 97.6km long main canal through the Silvan and Babakaya Tunnels.

Hadimi Irrigation Tunnel

The Hadimi Tunnel is 18,136m long and will transfer the water stored in Afsar Dam to Bagbasi Dam. Hadimi Tunnel is one of the biggest projects in the region, and in Turkey. 11.5km of the tunnel is excavated by TBM and 6,631m by the drill and blast method.

FUTURE TUNNELLING ACTIVITIES

3-Deck Great Istanbul Tunnel

The new mega project in Istanbul, the "3-Deck Great Istanbul Tunnel," will be first 3-deck tunnel in the world and will consist of both the metro line and dual motorway. The tunnel is estimated to cost \$3.5bn and will be 17.5m in diameter and 4.5km in length. There are 2x2 lane highways

and a dual line metro in the scope of the great tunnel. It will be integrated with rail systems and highway lines.

Within the project; there are 31km of metro lines with 14 stations, and 16.5km of highway. The station I at Golden Horn (Halic) will be constructed under sea using an immersed tube.

It is expected that 6.5M passengers a day will benefit from the line.

Dolmabahce-Kilyos Tunnels

The Dolmabahce-Kilyos Tunnels Project consists of three sections. In this sections there are six tunnels, which will be excavated by NATM. The total length of these four tunnels is approximately 20.4km. The excavation works of the Dolmabahce-Levazim tunnel has started.

Kagithane-Buyukcekmece Tunnels

In the Kagithane-Buyukcekmece Tunnels Project there are eight tunnels. Two different methods will be used for these tunnels. The first two tunnels will be excavated by NATM and the others will be excavated by TBM. The total length

of this eight tunnels are approximately 26.7km.

Harem-Kucukusu Tunnels

The Harem-Kucukusu Tunnels Project consists of 3 twin-tube tunnels. The total length of these three tunnels is approximately 9.2km.

Yenisahra-Bostanci-Kucukyali Tunnels

The Yenisahra-Bostanci-Kucukyali Tunnels Project consists of two sections. In this section there are 2 twin-tube tunnels with a total length of approximately 6km.

STATISTICS

1. Length or volume excavated - % mechanized/% conventional during 2019

- Total Length (m) 232.496,76
Mechanized (%) 80,40
Conventional (%) 19,60
- Total Volume (m³) 15.496.937,40
Mechanized (%) 70,90
Conventional (%) 29,10

2. Amount (USD or EUR) of tunnelling/underground space facilities awarded in 2019:

Amount (USD or EUR) of tunnelling/underground space facilities awarded in 2019: US\$3.828.757.547,20

EDUCATION ON TUNNELLING IN THE COUNTRY

Afyon Kocatepe University
Bilecik Seyh Edebali University
Bingol University
Cukurova University
Dicle University
Dokuz Eylul University
Fatih Sultan Mehmet Vakif University
Istanbul University - Cerrahpasa
Istanbul Okan University
Istanbul Technical University
Konya Technical University
Mugla Sitki Kocman University
Nigde Omer Halisdemir University
Ondokuz Mayis University
Middle East Technical University
Nisantasi University
Pamukkale University
Recep Tayyip Erdogan University
Sivas Cumhuriyet University
Suleyman Demirel University
Toros University
Yalova University
Zonguldak Bulent Ecevit University



Dudullu-Bostanci Subway Line