

Iran

Name: Iranian Tunnelling Association (IRTA)

Type of Structure: non-profit, open association

Number of Members: 800 (non-student) members, 519 student members, 190 corporate members.



ASSOCIATION ACTIVITIES DURING 2019 AND TO DATE

- Publishing Quarterly "Tunnel" Magazine
- Publishing bi-annual "Tunnelling and Underground Space Engineering" Journal together with Shahrood Technical University
- Holding a total of 6 technical seminars
- Holding the 13th Iranian Tunnelling Conference (ITC 2019) on 19-20 November 2019 entitled "New Horizons in Tunnelling"
- Holding 4 workshops as a side program to ITC 2019

CURRENT TUNNELLING ACTIVITIES

Water transfer tunnels

- The Kerman water tunnel with a total length of 38km is under construction

using two DS-TBMs. This tunnel will transfer 700Mm³ water from Safa dam to the city of Kerman.

- Azad Water tunnel transfers water from Azad dam to Ghorveh-Dehgan

in Kordestan Province. The total length of the tunnel is 10.8km and is being constructed with an EPBM.

- The Sabzkouh water tunnel is being constructed to transfer 75Mm³ of water to Choghakour dam. The total length of the tunnel is 10.7km and is being constructed with an DS TBM.
- Gelass water tunnel is being constructed to transfer 650Mm³ of water from Gelass River to Urmiah Lake. The total length of the tunnel is 35.7km and is being constructed with an DS TBM.
- Dez water tunnel transfers 24m³/sec from Dez Dam to Khouzeestan



The portal of Konjancham tunnel Section KT2



Sar-e Pol-e Zahab tunnel (T4)



Compaction grouting in Sirvan River Water Transfer Tunnels T2

province. The length of the tunnel is 9.1km and being constructed using a DS TBM.

- Chamshir water tunnel transfers water from Chamshir dam to Liravy plain for agricultural purposes. The 7.1km long tunnel is being constructed using a hardrock TBM.
- Lar water tunnel in north of Tehran is being constructed in two sections to transfer 260m³ of leaking water from Lar dam to Tehran's water treatment plant No. 5 and Latian dam. The first section is 20.3km long and the second 7.5km.

Sewage tunnel

- Tehran's western Sewage tunnel with a length of 10.8km is being constructed using and EPBM to transfer 17.22m³/sec of water to the water treatment plant in south of Tehran.

Metro tunnels

Construction of various metro lines in different cities in Iran is continuing. These include:

- Extension of Tehran metro line 6 –1840m were constructed in 2019

- Tabriz metro line 2 with a total length of 22.4km and 20 stations (being constructed by TBMs) 1500m were constructed in 2019
- Mashhad metro line 3 with a total length of 28.5km and 24 stations (being constructed by TBMs) – 3400m were constructed in 2019
- Shiraz Line 2 (double tube) with a total length of 26.2km (2*13.1km) – 4120m were constructed in 2019
- Isfahan Line 2 with a total length of 24.7km is under construction – 4250m were constructed in 2019

COMPLETED PROJECTS

Road tunnels

- The Shoushtari tunnel is an 8km long tunnel forming part of the Shoushtari highway in Tehran which is currently under construction using conventional methods.

Water tunnels

- The construction of Zagros tunnel in the following sections has been completed in March 2019: Section T1-1A with a length of 13.7km; Section T1-1B with a length of 8.8km; and section T1-2 with a length of

- 25.7km (all constructed with DS TBM)
- Sirvan River Water Transfer Tunnels T2 with a length of 2.8km and T3 with a length of 1.5km constructed with conventional methods
- Sar-e Pol-e Zahab tunnel (T4) with a length of 4.3km constructed with an EPBM.
- Konjancham tunnel constructed with DS TBM was completed in the following sections: Section KT1 with a length of 4.9km and constructed with conventional method was completed in June 2019 Section KT2 with a length of 12km was constructed by a DS TBM and completed in March 2019
- Bazi-Deraz Tunnel (T5) with a length of 8.5km was constructed with an EPBM and completed in January 2019

Road tunnels

- First sector of Tehran-Shomal Freeway completed. This sector has a total length of 32km and consists of 40 tunnels (total length of 32km in two directions and also includes the longest service tunnel of the freeway namely Taloun tunnel with a length of 4900m)

FUTURE TUNNELLING ACTIVITIES

The following tunnel projects are planned (long term):

- Completing and expanding road and railway networks
- Completion and development of various metro lines in numerous cities (eg. Tehran, Tabriz, Karaj, Isfahan, Mashhad)
- Completion of water transfer tunnels

EDUCATION ON TUNNELLING IN THE COUNTRY

Tunnelling as a specialized field of Study is being held at Postgraduate level (Master's Degree) in the following Universities:

- 1) Amirkabir University of Technology;
- 2) Shahrood University of Technology;
- 3) Tarbiat Modares University;
- 4) Urmia University of Technology.

Tunnelling is also taught at Bachelor level in form of study modules in Mining and Civil Engineering fields in numerous universities. Other related courses in Geotechnical Engineering (Soil mechanics, rock mechanics, Engineering Geology), Construction Management etc. are also offered in various universities.