

Iran



Name: Iranian Tunnelling Association (IRTA)

Type of Structure: non-profit, open association

Number of Members: 805 (non-student) members, 445 student members, 200 corporate members

ASSOCIATION ACTIVITIES DURING 2022 AND TO DATE

- Publishing Quarterly "Tunnel" Magazine
- Publishing bi-annual "Tunnelling and Underground Space Engineering" Journal with Shahrood Technical University
- Holding a total of five technical seminars (in the form of online webinars)

CURRENT TUNNELLING ACTIVITIES

Metro tunnels

Construction of various metro lines in

different cities in Iran is continuing. Progress in construction of Metro tunnels during 2022 includes:

- Advance of Isfahan's Metro Line 2 - western single tunnel 1200m, 9m diameter
- Advance of Isfahan's Metro Line 2 - eastern twin tunnel total 2600m (1300m each), 7m diameter (using EPBMs)
- Advance of Eslamshahr's Metro Phase 1 - single 5000m tunnel using a 9m diameter EPBM
- Advance of Mashhad's Metro Line

4 - 2000m, 9m diameter (using an EPBM)

- Advance of Mashhad's Metro Line 3 twin tunnels - 2400m (1200m each), 9m diameter (using two EPBMs)
- Advance of Tabriz's Metro Line 2 - 2800m (1400m each), 9m diameter (using two EPBMs)
- Advance of Tehran's Metro Line 6 - The Southern Extension 1600m using a 9m diameter EPBM
- Advance of Karaj's Metro - single tube 2000m (NATM)
- Advance of Kermanshah's Metro - single tube 1800m (NATM)
- Completion and Inauguration of the first phase of Shiraz's Metro Line 2 with total length of 11,000m
- Completion and Inauguration of some stations on Qom's Metro Line A
- Completion and Inauguration of some stations on Tehran's Metro Line 6
- Completion and Inauguration of some stations on Tehran's Metro Line 7

Water transfer tunnels

Construction of various water tunnels in different cities in Iran is continuing. Progress in the construction of Water tunnels during 2022 includes:

- The Gelass (Kani-Sib) water tunnel is being constructed to transfer 650Mm³ of water from the Gelass River to Urmiah Lake. The total length of the tunnel is 35.7km which has been completed using two EPB-Hard Rock (Dual Mode) TBMs.
- Excavation of the first phase of the Lar-Kalan water tunnel with a 7000m length was completed last year.
- The Kerman water tunnel with a total length of 38km is under construction.
- The alternative drinking water transfer system of the Alborz and Tehran provinces from Taleghan dam; 65km long water conveyance tunnels (in 4 lots: Western lot (17km) + Middle lot (19km) + Eastern lot (16km) + Alborz lot (13km) is under detailed studies. Excavation of the Eastern tunnel will start at the beginning of 2023.
- Advance in the surface water collection tunnel of District 21 of Tehran's municipality – 1000m with a diameter of 4.4m (using an EPBM).
- Excavation of the Western Tehran Wastewater Tunnel with 10000m length was completed last year with a diameter of 4m (using an EPBM).

Road & Railway tunnels

Construction of various road & railway tunnels in different cities in Iran is continuing. Progress in construction of Road & Railway tunnels during 2022 includes:

- Work on the second sector of the Tehran-Shomal Freeway has continued over the last year. As reported previously, this sector consists of 59 tunnels (bi-directional) with a total length of approx. 37km (northbound, southbound, and service tunnels).
- Advance of the Emamzadeh Hashem Road Tunnel No.2 – 500m
- Advance of the Pataveh-Dehdasht Road Tunnels – 8200m
- Advance of the Kabirkooch Road Tunnel – 4750m
- Advance of the Zahedan-Chabahar Railway Tunnels – 10000m
- Advance of the Bardsir-Sirjan-Kerman

Railway Tunnels –1000m

- Advance of the Rasht-Astara Railway Tunnel –500m
- Advance of the Shahrekord-Sefiddasht Railway Tunnels –1500m

FUTURE TUNNELLING ACTIVITIES

- The development and extension of Metro tunnels; such as Tehran's Metro Line 4 and the extension of Shiraz's Metro Line 2.
- Water desalination and transferring purified water from the Sea of Oman to the east of Iran and from Persian Gulf to the Central Plateau of Iran is one of the biggest schemes defined to replenish Iran's eastern and central water deficit. It has been implemented since last year and will continue into the future. There are several tunnels designed for water conveying in these projects.

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:

- Amirkabir University of Technology
- Tarbiat Modares University
- Shahrood University of Technology
- Urmia University of Technology

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