

AETOS is a National Private Association with institutional and individuals members.

AETOS was an active member nation in the 2012 ITA World Tunnel Congress, held in Bangkok from May, the 18th to May, the 23rd. Two members of the AETOS Board participated in the ITA WG Meetings, in WG2 (Research) and WG19 (Conventional Tunneling).

AETOS participated in the BEFIPS meeting (National Tunneling Associations of Belgium, Spain, France, Italy, Portugal and Switzerland), held in Modane (France), visiting the Emergency Gallery in the Frejus Highway Tunnel in October the 17th.

AETOS working groups are currently working on drafting regulations, technical publications and inventories of tunnels. Some groups organized courses with their members for training. At other times, they focus the work in line with the activities that are developing the ITA working groups, for example doing translations of documents, or similar researches.

## Inicia Construcciones

Improved Sanitation Network Capacity Abroñigales Basin. Bending Collector B Abroñigal. Lovat EPB TBM. 3,95 m diameter drill. Tunnel Excavation 2,400 m.

Urban Tunnel and Girona Station Phase I. Herrenknecht EPB TBM. 12.16 m diameter drill. Excavation 2.800 m tunnel.

Platform Construction Project and Road Runner High Speed Mediterranean. Section: Murcia-Almeria. Subsection: Sorbas - Barranco de Gafarillos. TBM Herrenknecht double shield, rock. 10.02 m diameter drill. Digging 6,600 m tunnel double tube.

Extension of Line 9 of the Madrid Metro. Tranche specialized 1. Trabajos mine excavation. Tunnel section 7.50 inner x 8,00 m and 540 ml in length ("BELGIAN METHOD").

## Euroestudios

Supervision and control of the platform works High Speed Line Madrid-Galicia, Olmedo-Medina-Zamora-Puebla de Sanabria-Ourense-Lubián. Sections: Espiño Tunnel via left and right satellite Espiño. Features:

- Length of section: 8.44 km.
- Tunnel Espiño right track: 7894 meters.
- Left lane tunnel Espiño: 7910 meters.

Control and supervision of construction of the high speed line Madrid - Galicia. Section: Zamora-Lubián. Subsection: Pedralba of Padornelo Praderia-tunnel. Features:

- Tunnel Pedralba of Praderia: 1700 meters excavation section of 86 m2.
- Tunnel Requejo: 2405 meters excavation section of 75 m2.

Highway Beasain - Durango. Section: Zumárraga East - Link Urretxu / Legazpi. Features:

- Length of section: 2.2 km.
- Link Zumarraga.
- Link Urretxu.
- Arguisao Tunnel: two tubes of 890 meters each.
- Viaduct Urola: 266 meters.

Supervision and control of construction of the highway Jammu - Srinagar. Section: Chenani - Nashri. (India), including Patnitop tunnel of 9 km in length. Improvement and expansion from two to four lanes of the highway Jammu - Srinagar, stretch Chenani - Nashri, including a new tunnel of 9 km, which is built along the New Model Austrian. Features:

- Line length: 11 km.
- Patnitop Tunnel 9 miles.
- 2 bridges.

Supervision of construction of the High Speed Line Vitoria - Bilbao - San Sebastián. Section: Lemoa - Galdakao. Features:

- Length of section: 5.42 km.
- Three tunnels with lengths between 1826 meters (Galdakao Tunnel) and 180 meters. Excavation section 85 m2.

Technical assistance and monitoring of construction of High Speed Line Vitoria-Section: Galdakao - Basauri. Features:

- Line length: 3.58 km.
- Zarátamo Tunnel: 2728 meters excavation section of 85 m2.
- Type of excavation: NMA.

Supervision and control of construction and road rehabilitation Buga - Buenaventura (Colombia). Section: Cisneros - Loboguerrero. Construction supervision. Features:

- Length of section: 13.3 km.
- New tunnels: 12 with lengths between 1440 meters and 150 meters, which together account for almost 7 kilometers.
- Rehabilitation of six tunnels totaling 1330 meters in length.
- Type of excavation: New Austrian Method.

Supervision and control of construction of the High Speed Line Vitoria-Section: Tolosa. Features:

- Length of section: 3.8 kilometers
- Tunnel 1: 1513 meters excavation section of 85 m2.
- Tunnel 2: 1473 meters excavation section of 85 m2.
- Type of excavation: New Austrian Method.

Supervision and control of construction of the High Speed Line Vitoria - Bilbao - San Sebastián. Section: Legorreta. Features:

- Line length: 3.58 meters.
- Tunnel Legorreta: 2905 meters long and 85m2 excavation section.
- Type of excavation: New Austrian Method.

Technical assistance and supervision of construction works of the New Basque Railway Network. Section: Galdakao - Basauri. Features:

- Length of section: 3.58 km.
- Tunnel Zarátamo, 2728 meters long and 85m2 excavation section.
- Type of excavation: New Austrian Method.

Technical assistance for the construction of C-25 Transversal Arterial. Section: Vic - Ruidellots de la Selva. Features:

- Length of the trail: 55 km.
- 8 tunnels with lengths between 177 and 1420 meters of excavation sections and between 83,27 and 116,89 m2.
- Type of excavation: NMA.

Supervision of the construction of the motorway Orbital Barcelona. Section: Olessa of Montserrat - Viladecavalls. Features:

- Length of section: 10.2 km.
- Tunnels Olessa of 1264 meters excavation section 226 m2.
- Type of excavation: German Method.

Metro Construction Project of Donostia - San Sebastián. Section: Lugaritz - La Concha. Features:

- Length: 2.4 km tunnel in mine.
- 2 stations.

Conceptual design of tunnel installations included in the Group 3 runners Structuring Concession Vouchers roads by groups of Colombia. The study includes 28 tunnels with a length between 4,458 and 90 meters.

Tunnels Inspection Zone 2 (Central - Southern) of Spain from the state highway network. Provinces of Segovia, Madrid, Caceres, Toledo, Cuenca, Guadalajara, Murcia, Jaen, Almeria, Granada, Malaga, Seville and Cadiz. The works include the

inspection of a total of 136 tunnels which together account for more than 87 km. Among them are 20 tunnels over 1.00 meters and 36 between 500 and 1,000 meters.

Security officials operating in existing tunnels on the State Road Network of Eastern Andalusia. The works include the inspection of a total of 41 tunnels totaling more than 35 miles. Safety Responsible for the operational phase Somport tunnel. This is one of the longest road tunnels in Spain, with 8.6 kilometers.

Drafting the study of alternatives to improve the evacuation and ventilation in the underground network of near Barcelona. The study undertaken by the company includes the tunnels in central Barcelona, Terrassa and Sabadell. In total there are 9 tunnels that together add up to 31.9 km, with lengths between 6,313 and 1,140 meters.

### **Vias, Corsan Corviam, Copasa**

Platform high speed line Madrid-Zaragoza-Barcelona-French border. Section: Nudo de la Trinidad – Montcada. Section 4.75 km high-speed line, which corresponds to a 3 km underground section executed by TBM 11.66 m diameter and thickness of the coating segments 0.45 m, 0.7 km are cut and cover tunnel. The fundamental unit is the execution of a tunnel boring machine and precast concrete segments. Its main dimensions are: - total length: 3,017 m; diameter: 10,40 m. For the implementation uses a brand HERRENKNECHT TBM EPB with an outside diameter of 11.660 mm, equipped with electric drive with maximum torque of 40,695 kNm and maximum thrust of 138,100 kN.

### **Vías y construcciones, s.a**

Platform for High Speed Line Madrid-Galicia. This subsection, of 8.95 km long, runs through the towns of Baños de Molgas, Xunqueira of Ambia, Paderne Allariz, Allariz and Taboadela. It includes the construction of two viaducts, one on Arroyo dos Muiños of 21 m in length, and another on the Arroyo Pazos, with a length of 64 m. In addition, it also highlights the construction of the tunnel I Casares, of 3,490 m.

### **Vías-nortúnel**

Platform for High Speed Line Vitoria-Bilbao-San Sebastian. Section: Durango-Amorebieta/Etxano (Vizcaya). Tranche 4,60 kilometers long. Building Larrinagatxu viaducts, Etxena and Betzuen of 66, 428 and 280 meters long respectively, and those of Bernagoitia I and II, both 36 meters length. Also works include the San Andres tunnels (703 meters), Urzelai (661 m.), Olabarrie I and II (481 and 409 meters respectively) and, between the latter two Olabarrie artificial tunnel, 172 meters in length. The free section is 100m2 tunnels for San Andrés, 95 m2 in the case of Urzelai and 85 m2 for Olabarrie.

### **Comsa**

Metro Ankara: Batikent-Sincan-Torekent Section. 15,360 m Line 3. 11 Stations.  
Metro Ankara: Kizilay-Cayyolu Section. 16,590 m Line 2. 11 Stations.