

Fire fighting training in tunnels and galleries

We offer theoretical and practical tunnel training courses for emergency services and other profiles.



Unique facilities for fire fighting training in tunnels and galleries

Our technology centre, located in Asturias (Spain), has highly specialised facilities for practical exercises and intervention manoeuvres in [full-scale fire situations](#), as well as for carrying out simulations.

600 metre tunnel

We have a 600 metre long tunnel. It is a concrete cut-and-cover tunnel, equivalent to a two-lane road tunnel or a railway tunnel. It is equipped with:

- Four different ventilation systems.
- Passive protection systems that enable it to withstand fires of high heat power, in excess of 200 MW.
- Fibre optic network for the operation of the control and data acquisition systems.
- Fire extinguishing areas.
- Emergency exits.

It also has additional equipment

- Water storage tank with a total capacity of 600 m³.
- 150 mm diameter pressure pipe on the outside of the tunnel, located at kilometre point 300 and fed by a pressure group working at a maximum pressure of 4 bar and with a capacity of 180 m³ /h.

- Pressure pipe 100 mm in diameter inside the tunnel, with hydrants every 50 m.

Training gallery

We also have a 150-metre training gallery. This is a service gallery, made of sheet steel, with dimensions equivalent to those of a service gallery of any underground structure.

It is used to carry out practical exercises on extinguishing and orientation equipment, movement and search in interior galleries with fire and smoke.

Its main characteristics are as follows:

- Length: 150 m (it can be linked to the tunnel service gallery up to 450 m long).
- Width at the base: 2.40 m.
- Maximum height: 2.50 m.
- Entrances at the same level: 2 entrances.
- Upper entrances: 2 entrances (one of them with a staircase).
- Lower entrances: 1 entrance.
- Emergency exits: 4 (one every 37.50 m).
- Fire zones: 2 fire zones with a power of 5 MW.

Training for fire brigades and mine rescue squads

We have been providing tunnel training and underground galleries to fire brigades, mine rescue brigades and other emergency services for more than ten years.

We have [training programmes with different technical levels](#), lasting from 1 to 5 days. During the training, we present both the theoretical aspects necessary for understanding the factors that influence these types of fires and the practical cases of intervention by emergency teams.

Blended learning courses

We also offer blended learning courses from 2 to 4 days, combining classroom training with practices and manoeuvres in our tunnel, with online theoretical training through our [Applus+ Laboratories](#) training platform.

E-learning training

E-learning training makes it possible to bring the theoretical part forward, thus reducing the time spent in the tunnel by one day and focusing activity on the practical part. The e-learning training has been designed in consultation with the trainers of the on-site courses so that the training integration is complete.

In addition, we adapt each course to the needs of each corps depending on the characteristics and specific risks of the facilities they are in charge of, as well as their operational capabilities and their fire-fighting equipment.

Thanks to our experience and our facilities, we are leaders in firefighter training not only in Spain (Oviedo, Asturias, Alicante, Comunidad de Madrid, Barcelona, Almería, Zaragoza, Navarra, AENA), but we also offer [training at European level](#) (Portugal, Italy and Andorra) and International level such as Israel, Firefighters of Quito (Ecuador) and Firefighters of Ñuñoa (Chile).

Training for tunnel fire operators and managers

We also offer training courses for tunnel operators and tunnel managers. Tunnel control room operators play a key role in the event of a fire, as their actions are key to managing fire and ventilation systems in critical and stressful moments. The course consists of theoretical training on the evolution of fire and types of ventilation in tunnels and practical training on real fire in the tunnel. The completion of this course gives the option to obtain a certificate and can be adapted according to the client's requirements.

Training for other professional profiles

In addition, we offer training courses for other professionals who may be involved in emergency management in tunnels:

- Tunnel operating companies
- Tunnel engineering and construction companies
- Passenger and freight transport professionals

The objective of these courses is to provide theoretical knowledge and practical experience on real fire situations in confined spaces. After the training, these professionals will have (controlled) experience of fire situations inside a tunnel. This knowledge will contribute to regulating their stress levels in a real situation and will allow them to act more objectively in case of emergency, whether in fire control and extinguishing tasks or in the evacuation of people.

We have different training modules that can be adapted to the needs of the client. Among the different topics, the programmes include:

Theoretical training

We offer theoretical training aimed at firefighters and managers who are looking for basic specialised knowledge in tunnels.

- Training on extinguishing equipment.

- Ventilation systems.
- Configuration of a road tunnel and its emergency exits.
- Evacuation measures in case of fire.

Practical training

Practical training involves working in situations that are as close as possible to reality with regard to:

- Evacuation in tunnels.
- Observation of smoke behaviour from inside the tunnel and from the control room.
- Handling of self-contained breathing apparatus and fire extinguishing equipment.

Why choose Applus+ Laboratories for fire fighting training in tunnels and galleries?

Our experts have conducted firefighter and mine rescue training courses on tunnel and tunnel fire for different countries. Our test tunnel is an ideal training environment for practical exercises and tunnel intervention manoeuvres.