
Advanced Certificate in Tunnel Fire Protection

Tunnel firefighting tactics

Advanced Certificate in Tunnel Fire Protection: A certification program that provides fire protection professionals with advanced knowledge and skills in tunnel fire protection, including tunnel firefighting tactics.

Air pressure ventilation system: A ventilation system used in tunnels that uses fans to create positive or negative air pressure to control the movement of smoke and heat in the event of a fire.

Air track ventilation system: A ventilation system used in tunnels that uses fans to create an airflow in the direction of traffic to control the movement of smoke and heat in the event of a fire.

Backup team: A team of firefighters that provides support to the primary firefighting team in tunnel firefighting operations.

Burning rate: The rate at which a material releases heat and energy when it is burning.

Compartmentation: The division of a tunnel into smaller sections using fire-resistant materials to prevent the spread of fire and smoke.

Confined space: A space that is large enough for a person to enter but has limited means of entry and exit, and is not designed for continuous occupancy.

Cross-ventilation system: A ventilation system used in tunnels that uses openings on both sides of the tunnel to create an airflow to control the movement of smoke and heat in the event of a fire.

Decay period: The period during which a fire's burning rate decreases due to a lack of fuel or oxygen.

Detection system: A system used in tunnels to detect the presence of smoke, heat, or fire.

Fire control room: A control center located in a tunnel that is used to monitor and manage fire protection systems and firefighting operations.

Fire growth period: The period during which a fire's burning rate increases due to the availability of fuel and oxygen.

Fire load: The total amount of heat energy released during a fire, typically measured in megajoules (MJ).

Fire resistance: The ability of a material or structure to withstand fire and maintain its structural integrity.

Fire suppression system: A system used in tunnels to extinguish or control fires, typically using water, foam, or gas.

Fixed firefighting system: A fire suppression system that is permanently installed in a tunnel, such as a

sprinkler system.

Flashover: The rapid spread of fire from one part of a tunnel to another, typically due to the buildup of heat and smoke.

Fogging system: A fire suppression system that uses water droplets to cool and suppress a fire.

Fuel load: The amount of fuel available for a fire, typically measured in kilograms per square meter (kg/m²).

Hose line: A length of fire hose used to transport water or other firefighting agents to a fire.

Hydrochloric acid: A corrosive and toxic chemical that can be produced during a fire involving materials containing chlorine.

Incident command system: A management system used by fire departments and other emergency services to coordinate and control their response to an incident.

Initial attack team: The first team of firefighters to respond to a tunnel fire.

Isolation: The separation of a fire from the rest of a tunnel using fire-resistant materials.

Mobile firefighting system: A fire suppression system that is mounted on a vehicle, such as a fire engine.

Nozzle: The end of a fire hose that directs the flow of water or other firefighting agents.

Positive pressure ventilation system: An air pressure ventilation system that creates positive air pressure in a tunnel to control the movement of smoke and heat in the event of a fire.

Primary search: The initial search for victims in a tunnel fire.

Radiant heat: The heat energy emitted by a fire and felt by nearby objects or people.

Re flash: The re-ignition of a fire after it has been extinguished.

Risk assessment: The process of identifying and evaluating the risks associated with a tunnel fire.

Smoke: The visible mixture of particles and gases produced by a fire.

Smoke exhaust system: A system used in tunnels to remove smoke in the event of a fire.

Smoke filling time: The time it takes for smoke to fill a tunnel in the event of a fire.

Smoke layer: The layer of smoke that forms above a fire.

Smoke ventilation system: A system used in tunnels to control the movement of smoke in the event of a fire.

Structural firefighting: The use of firefighting tactics and techniques to protect and preserve structures from fire damage.

Thermal imaging camera: A device that uses infrared technology to detect heat and produce an image of a fire.

Tunnel fire: A fire that occurs in a tunnel, typically involving vehicles or other equipment.

Tunnel fire protection: The measures and systems used to prevent and control fires in tunnels.

Tunnel firefighting tactics: The strategies and techniques used by firefighters to extinguish or control fires in tunnels.

Underground fire: A fire that occurs in an underground space, such as a subway tunnel.

Vaporization: The process by which a liquid is converted into a gas, typically due to the heat of a fire.

Ventilation: The process of controlling the movement of air in a tunnel to prevent the spread of smoke and heat in the event of a fire.

Ventilation control device: A device used to control the movement of air in a tunnel, such as a fan or damper.

Ventilation system: A system used in tunnels to control the movement of air, typically used in conjunction with a smoke exhaust system to remove smoke in the event of a fire.

Ventilation-limited fire: A fire in a tunnel that is limited by the amount of air available for combustion.

Vertical ventilation: The process of creating an opening in the roof of a tunnel to allow smoke and heat to escape.

Water curtain: A fire suppression system that uses a curtain of water to cool and suppress a fire.

Water mist system: A fire suppression system that uses a fine mist of water droplets to cool and suppress a fire.

Water spray system: A fire suppression system that uses a spray of water to cool and suppress a fire.

Wet chemical system: A fire suppression system that uses a chemical agent to extinguish or control a fire.