



INTELLIGENT SOLUTIONS FOR TUNNEL PROTECTION

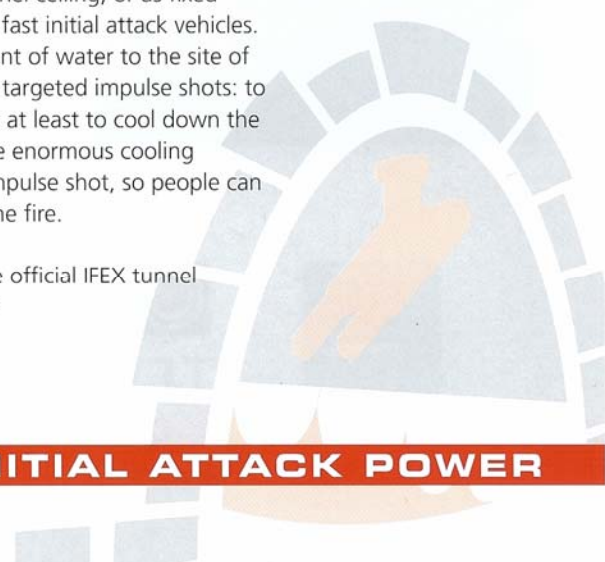


Disastrous tunnel fires in the past years have shown that there's still a lot of work to do in regard to effective fire protection for road and train tunnels. IFEX technologies has now developed an effective tunnel extinguishing concept which will provide a major contribution to tunnel safety.

The decisive IFEX product advantage – efficient water usage – was turned into a combination of innovative extinguishing systems: sensor controlled and mounted on rails under the tunnel ceiling, or as fixed installation on the tunnel wall, or mounted on fast initial attack vehicles. These systems need to carry only a small amount of water to the site of the fire to achieve maximum effect with a few targeted impulse shots: to either extinguish the fire in a still early stage or at least to cool down the temperature inside the tunnel, by means of the enormous cooling surface and heat absorption capacity of the impulse shot, so people can be rescued and firefighters can get access to the fire.

Ask for a copy of the 'Sintef' test report on the official IFEX tunnel testings at the 'Akrafjorden' tunnel in Norway.

INITIAL ATTACK POWER



IFEX WHEELED SYSTEMS

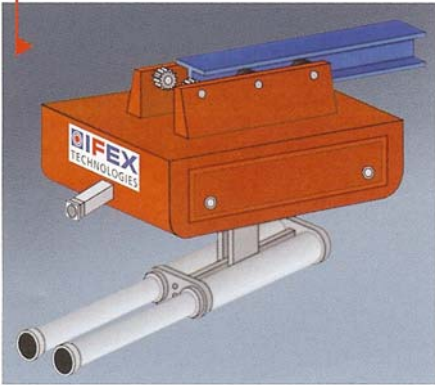


The IFEX tunnel truck carries 2x12 or 2x15 liter impulse cannons. In addition, hose reel units with the one liter handheld IFEX impulse gun are mounted. The truck is provided with a 1,000 liter water reservoir, motor driven water pump and air cylinders for powering of the impulse cannons and the impulse guns. The cannons are equipped with pan and tilt mechanism for shooting in all directions and are operated from the driver's cabin. For accurate shooting the mechanism has a locking system that is activated upon triggering.

In a tunnel fire situation, the trucks will enter the tunnel openings and shoot frequently to reduce the temperature, reach the site of the fire and extinguish.

The Tunnel FireHunter is equipped with an inline foam injector for effective extinguishing of liquid fuel fires.

IFEX RAILED SYSTEMS

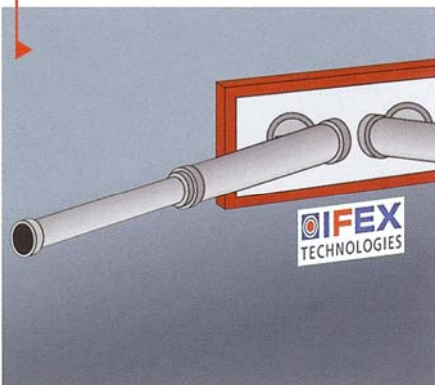


The mobile unit 'S' is installed on a mono rail system and carries a water reservoir of 2,000 liters with sufficient air supply. The unit is fully self-contained with battery driven electrical motors, batteries, braking mechanism and magnetic lock. The unit can move at a speed of 20 to 40 km/h; the units will be installed at every 1,500 meters and so will be on the site of the fire under 3 minutes.

In a fire situation, the alarm signal is transmitted automatically to the IFEX unit and causes it to start driving to the section on fire. The unit is provided with an infrared detector and a monitoring system that pans and tilts the cannons into the right direction and shoots automatically right into the base of the fire.

The mobile unit 'L' is basically the same system as the unit 'S', but is installed on a dual rail system and therefore is able to carry a water reservoir of 3,500 liters.

IFEX FIXED SYSTEMS



The IFEX fixed system application for road and train tunnels consist of high performance impulse cannons with capacities of 12 to 40 liters per impulse shot. Every 60 meters, a unit is mounted into the tunnel wall consisting of two impulse cannons shooting in both directions to totally cover the section. The cannons will be tilted downwards for maximum efficiency and overlapping.

The fire detection system will detect the fire by means of flame and rate of heat release detectors. In a fire situation, the cannons within the section and the cannons located on each side of the section will be activated.



IFEX
TECHNOLOGIES

INITIAL ATTACK POWER