

APPLICATIONS

TUNNEL PROTECTION



# MicroDrop®

*“Rapidly reduces radiated heat and smoke formation to provide visible means of escape in traffic & transportation tunnel fires”*

## The Challenge

The fire risk within traffic and transportation tunnels is amplified by the need to ensure the safe mass evacuation of people who could be exposed to the primary danger of smoke and toxic fumes that are difficult to vent in a controlled way within tunnels.

The Tyco Fire & Integrated Solutions MicroDrop® High Pressure Water Mist system is an ideal fire protection solution to meet the specialist needs of the traffic and transportation industry in full.

Having worked in partnership with traffic & transportation construction groups on over thirty turnkey tunnel projects throughout the world, there

is no imaginable fire and safety risk within this market sector we have not encountered and neutralised.

It is therefore hardly surprising that Tyco Fire & Integrated Solutions is a preferred supplier with a proven track record for providing an Integrated Risk Management Approach to meet the specialised needs of the traffic & transportation industry.

MicroDrop® High Pressure Water Mist systems play an important role in that overall approach.



The intelligent use of water...

**tyco**

*Fire & Integrated Solutions*

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## TUNNEL PROTECTION



### MicroDrop® Tunnel Industry “Fast Facts”

- Rapidly reduces radiated heat and smoke formation to provide visible means of escape in traffic & transportation tunnel fires
- MicroDrop® minimises damage to the tunnel infrastructure and maximises tenable conditions for the fire brigade to ensure all traces of fire within the tunnel are eliminated.
- MicroDrop’s minimal use of water results in less clean up time and faster re-instatement of tunnel operations.
- No “Post Fire” contamination or environmental issues. MicroDrop® does not use or require performance enhancing additives (anti-surfactants etc. to fight fires).
- No moving parts in the MicroDrop® nozzles ensure cheaper life cycle maintenance costs and higher reliability.
- MicroDrop® Pump systems have a smaller footprint than other conventionally designed HPWM pumps and a large tank is not required maximising the efficient use of floor space.
- The design efficiency of the MicroDrop® Pump system is more economical to maintain than other conventionally designed HPWM pumps and therefore reduces life cycle maintenance costs.

### Recent tunnel projects:

- Jubilee Line
- High Speed 1 St. Pancras CTRL Rail Link
- Lotsberg Transalpine Tunnel
- Palm Island Jumeirah Vehicular Tunnel.

### MicroDrop® Systems

In some cases, MicroDrop® open nozzles may be required to be integrated into an infra-red flame detection system, an addressable/ analogue fire detection system or a VESDA early warning system depending on the type of risk to be protected.

These highly sophisticated systems will not discharge high pressure water mist through the open nozzles unless two or more detector devices detect a fire in its very early incipient stages and send a fire alarm signal to the main control panel.

This provides tunnel and transportation staff with sufficient time to investigate the cause of the initiated fire alarm and probably prevent a small fire from becoming a large one in the first place.

The intelligent use of water...

The water supply to the nozzles is fed from either a high pressure 100 - 120 bar pump and small water storage tank or a bank of cylinders.



MicroDrop® high pressure water mist has a dramatic effect on fire. As the size of the water droplets are so small, they are lighter and remain airborne longer than conventional water based systems.

The micro droplets also provide a much larger surface area that enables the discharged water to more effectively cool and knock down the fire to a controllable size.



### MicroDrop® Tunnel Industry Applications at a glance

- General tunnel areas
- Generators, boiler rooms and UPS (Un-interrupted Power Supply) areas
- Electrical cable trays
- Escalators
- Active Traffic Management Control Centres (ATMCC's)
- Retail shops and associated storage

For further information contact your local Tyco Fire & Integrated Solutions office on: [tfis.microdrop.uk@tycoint.com](mailto:tfis.microdrop.uk@tycoint.com) or visit our website at [www.tycofis.co.uk](http://www.tycofis.co.uk)

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