

Tunnel Extinguishing System TLA “System Lenzing”

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Abstract: Tunnel fires are usually no major fires in the very first minutes. Due to the average very long time between the detection of fire and the arrival of fire brigades the professionals are most of the time faced with extinguished fires or dramatically increased hazards. The extinguishing installation concept TLA “System Lenzing” enables everyone to start rapid intervention activities without training much more effectively than by means of portable fire extinguishers currently common in tunnels. Easiest handling, performance and security were main issues for the design of that concept.

Keywords: rapid intervention by everyone, TLA “System Lenzing”, foam, 120 m of hose

Introduction: In 1999 car drivers as well as tunnel operators were shocked by the hazards in the Tauern tunnel and the Montblanc tunnel. At this time we were asked by members of the ÖSAG – “Österreichische Autobahn- und Schnellstraßen AG” and by the Austrian fire brigade, department tunnel security 4.4 to consider technical solutions to enable all those who can fight small fires which will become enormous fires some minutes later.

Results: After years of tests a product was designed which met the following requirements of road operators and fire brigades:

1. Easiest activation

The installation is activated by the switching of one lever in front of the branchpipe. Unless doing this the nozzle cannot be taken.

2. Easiest handling

The low weight fire hose and the nozzle which is operated again by one lever enables everyone to use the system. One man can pull off the entire 120 m of hose alone (0,185 kg /m and a smooth textile surface)!

3. Available everywhere in the tunnel

The units should be installed each 125 m. With the length of hose of 120 m and a throwing range of minimum 15 m the entire tunnel can be covered by at least two units.

4. Secure distance to fire

A throwing range of 15 to 20 m keeps users back in a secure distance in opposite to portable fire extinguishers.

5. Efficiency & back burn resistance

High grade foam agents - film forming and alcoholic resistant (AFFF-AR) tested according to EN 1568 with the reached level of 1A / 1A - admixed by mechanical pressure foam proportioners, which are highly accurate independently from pressure and flow and finally a minimum flow of 50 l/min are responsible for the efficiency and back burn resistance.

6. Sufficient supply of agent

25 l or 60 l cans of concentrate and the connection to the stationary water supply are providing agent for a reasonable time (15 to 30 min continuously).

References:

1. In Austria:

In emergency niches:

Pfänder, Amberg, Plabutsch,
Herzogberg, Steinhaus, Noitzmühle,
Gräbern, Semmering,
Schön-Inzersdorf,

In each niche all 120 m:

Neumarkt, Hallstatt, Losenstein

2. In Luxemburg:

In each niche all 120m:

Markusbiert, Gousselerbiert

