

**Submittal of Abstract
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Case Study:

**Bus Garage Watermist Protection Project at the
Sondrio Provincial Transport Company**

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BIO. Dott. Ing. Simone Parolo is responsible for Quality, Safety and Environment at the Sondrio Provincial Transport Company. He has been instrumental in realizing and managing the watermist protection project which is the subject of this case study presentation. The STPS - Public Transport Company of Sondrio S.p.A. it was founded in 1976 by the Local Public Bodies of the Province of Sondrio; the company's headquarters are located in Sondrio.

Abstract

Cases of fires on public transport are increasingly being reported on the news. The phenomenon is on the rise. Why do buses catch fire? According to recent research, the main causes of a bus fire can be traced back to two areas: the progressive aging of the fleet and the increase in the percentage of buses approved according to increasingly stringent European anti-pollution standards, which require more frequent and complex maintenance procedures.

Meeting the increasingly stringent emissions limits has led Bus and Coach manufacturers to develop innovative technologies and this has significantly increased on-board equipment. The engine and technical compartments on these vehicles leave little space available for cleaning and maintenance, and when active, produce increased temperatures, especially in the engine compartment in the rear area of the bus. Euro 5 and Euro 6 vehicles require complex engineering to meet the environmental performance regulations. All these factors combine to increase the risk of fire and safety both inside the vehicle depots and out on the road. As the vehicle fleets age, the risk increases.

Public Transport Fleet Operators such as STPS, often operate in buildings where offices and headquarters are situated alongside or above the vehicle storage and maintenance depots, often close to busy passenger departure points. STPS quickly recognized that the fire risk and safety of personnel and passengers in their headoffice and other depots was becoming a matter of priority.

In 2019, STPS decided to launch a major fire safety investment project, and watermist was selected as the preference extinguishing solution.

This presentation will describe the reasons behind the choice of watermist, the roll out of the fire system installation project, first at the Sondrio headquarters and then extended to other STPS properties (the bus depot/workshop/offices in Morbengo, and Chiavenna, and the storage garages of Madesimo, Buglio in Monte, Mello, Caspoggio, Lanzada and Aprica).

The next phase of the project will be to introduce vehicle specific automatic watermist protection of the engine compartments. The presentation will provide a brief overview of the new obligations under UNECE R107 for the fire protection of engine compartments and present a watermist solution designed and approved for this specific type of application.

KEYWORD: public transport, water mist systems, bus and coach depots, garage protection, , industrial premises, engine compartment protection, UNECE R107.