
Watermist fire protection for protecting whole buildings.



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BIO:

Hans Schipper, with a background as a mechanical engineer in the process industry started his career with JCI more than 15 years ago as a Technical Service Engineer for fire suppression systems. Through the years he primarily focused on water mist and sprinkler systems and got promoted to Senior Engineer of the Technical Service and Training department for Water Mist Fire Suppression Systems. In this role Hans is the Technical Trainer and Engineering contact for in- and external customers to develop new opportunities for today's and future developments in the water mist industry.

Hans Schipper is a certified engineer for Water Mist Fire Suppression Systems and Sprinkler Systems. Hans Schipper is a delegate committee member of the CEN/TC 191 WG10 'Watermist systems'. He also has extensive relationships within the industry and AHJ bodies.

Abstract

[Background]

Usually, gas or sprinkler systems are used to protect fire risks or hazards in buildings (Whole Building Protection). Sprinklers protect the majority hazards of a building whereby gas systems are utilized for special hazards. However, due to an increasing environmental discussion, reducing water demand, green technologies, reducing carbon footprint of buildings, reduced building infrastructure cost and to avoid discussion about gas system's agents, a demand for optional fire protection systems – Watermist Systems - has arisen over last couple of years. Beneficially for this development the need of International Norms for Watermist systems, like NFPA750, FM4-2, EN14972 and VdS3188 series are important.

[Objective]

A series of fire tests protocols have been developed and released by accredited laboratories or insurers or being in the content of the specific fire test protocols like FM5560, EN14972 2-17, VdS 3883 and UL 2167 etc to validate the performance of Watermist systems in buildings. These Watermist fire test protocols are available for typical sprinkler and gas applications. Beside these fire test protocols every Watermist system shall be planned, installed and maintained in accordance with general Watermist design standards like NFPA750, FM4-2, EN14972 and the Manufacturers system DIOM's.

[Method]

By today the following Watermist system test protocols are available:

- Light & Ordinary hazard risks
- Residential risks
- Storage & Shopping areas, Libraries and Archives
- Parking Garages
- Offices, Kitchens, Restaurants
- Hotel and Accommodation areas
- Data Centres/Halls, IT Rooms
- Small Fryer protection in Kitchens
- Cable tunnels
- Machinery Rooms, Turbine/Generator Enclosures
- Local protection of Machinery equipment
- Automotive Manufacturing Lines
- Paint booth
- Flammable liquid storage rooms
- Local Protection Wood Press Machines
- Local Protection of Large-scale Industrial Fryers

[Results]

The tests of “suppression type” Watermist systems have given in the fire test evidence for proper performance. These tested Watermist systems have demonstrated their ability to suppress fires, means they have demonstrated in the conducted fire tests their ability to reduce the fire damage and ceiling temperatures.

The test of the “extinguishment type” Watermist systems have given as well in the fire test evidence for proper performance. These systems met the requirement of the dedicated fire test protocols in the means of having the ability to extinguish a fire test scenario in the predefined (required) time.

Each of the related test protocols has been specifically developed for the assessed fire risk/hazard. Most of the fire test protocols require additional parameters to be met/passed beside the above-mentioned generic fire protection system goals.

During this presentation Hans will highlight the “suppression type” Watermist systems (OH/HC classification, closed nozzles/Watermist sprinklers) related to whole / complete building protection and demonstrate that in fact there are no “blind spots” in your building anymore.

[Main conclusions and recommendations]

It can be concluded that for the protection of Whole Buildings Watermist systems, having executed the fire test protocols of EN 14972, VdS 3883, UL 2167, FM5560 etc planned in accordance with the design standards as like NFPA750, EN14972 etc and Manufacturers DIOM and using validated/proved components in their systems (laboratory component test passed) are a valuable and economic alternative for sprinkler/gas systems. Watermist Systems can provide the same safety and performance level by using less water compared to a conventional sprinkler system to protect buildings. With these standards the specifiers and consultant do have all available tools to specify Watermist systems for protecting whole buildings.

KEYWORD: water mist systems, whole building protection, EN14972