

Watermist at its turning point

Things have progressed well for watermist: there is a growing market for eco-friendly, sustainable products and the European Standard has now been published. Also, the list of applications has been getting longer and a research project could become a real game changer for watermist.

The first standards for watermist – FM 5560 and NFPA 750 – were developed well over a quarter of a century ago. Since then, the list of applications has been getting longer. Initially an off-shore technology, watermist systems in land-based projects are now common due to the smaller droplets that make watermist a suppressant agent that is applicable on a broad range of fire types. This has been proven in countless real-scale fire tests that have been carried out in fire laboratories over the last three decades.

When it comes to the eco aspect, watermist goes back a long way. In the 1980s the world acted to ban halon as it had caused ozone depletion. Watermist filled the gap that halon left. 'An important factor here was obviously the use of water instead of a chemical substance,' says Bettina McDowell, general manager at IWMA (International Water Mist Association).

▼ Pool fire test.



Image courtesy of Meritoff

Water-based fire extinguishing systems make up by far the largest share of the extinguishing technology sector. Using a natural resource is a good idea, but using less of it is an even better idea, because water is precious, especially in places like the Middle East where it is scarce. And there are more benefits: watermist reduces two sides of the fire triangle, the heat and the oxygen. In fact, watermist also wets the surroundings thus also affects the third side of the triangle – the fuel – although not as much as sprinklers. The components of watermist systems are smaller and need less space. Then there is also the cooling effect and the local inerting effect. If stainless steel is used, this prevents contamination and is also beneficial when it comes to the longevity of the systems.

Fires in hazardous areas are a special challenge as this can result in the release of many different toxins and chemicals from the fuel of the fire or gases. The firewater gathers these substances and has to be picked up and disposed of afterwards. This difficult job becomes easier the less water there is. Mentionable is also the reduced water damage.

All these benefits – some inside, others outside the eco-box – are now backed by the European Standards EN 14972 which specifies requirements and gives recommendations for the design, installation, inspection and maintenance of all types of fixed land-based watermist

systems. It is intended to apply to watermist automatic nozzle systems and watermist deluge systems supplied by standalone or pumped systems. It covers applications and occupancies covered by the fire test protocols of the EN 14972 series.

EN 14972-1:2020 was published on 23 December 2020, and although it may be a European Standard, it could well have a worldwide impact. Bettina McDowell explains: 'Based on the Vienna Agreement – which stipulates the exchange of information and increased transparency – standardization bodies can adopt standards that have been created in other parts of the world, which means that the European Standard can be used globally.'

A project that is about to start and which could change the perspective on sprinkler and consequently watermist systems is a research project on the performance of sprinkler systems. IWMA and the Fire Research and Innovation Centre (FRIC) in Norway have agreed to collaborate to take a closer look at this issue. The aim is to gather information on the performance of sprinklers in order to quantify the consistency of their extinguishing performance. IWMA will collect data and FRIC will organize, process and analyse it and publish an open report in early 2023.

Bettina McDowell explains: 'Our aim is to collect data from as many suppliers as possible that have conducted comparison testing between sprinklers and other alternative extinguishing systems. To ensure the quality of the results the tests have to come from accredited laboratories and approved sprinkler nozzles had to be used.'

Those who want to learn more about this technology are welcome to attend the 21st International Water Mist Conference, which in 2022 will take place in Madrid, Spain, on 9 and 10 November. Every year, manufacturers, scientists and other stakeholders come together for this event to network and exchange the latest knowledge.



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