

WATERMIST

HEAL THE WORLD BY DESIGN

IWMA general manager Bettina McDowell explains how water mist fits into a world that is facing challenges to protect the environment

The International Water Mist Association (IWMA) have held a long-standing dedication to water mist, something we see as eco-friendly and sustainable. Ever since it was founded it has supported the development and extension of water mist technology.

Those who have avoided the topic of climate change have to face it now, as the need to counter has arrived. Our impact on nature too often is a negative one. Some people argue that the living conditions and climate have always changed and that, of course, is true. However, earth overshoot day is coming earlier every year. So, would less actually be more?

In the 1980's the world acted to save the ozone layer by signing the Montreal Protocol, an act that banned harmful substances found in hygiene products. One of the substances that was then banned was halon, a chemical used as a fire suppression agent that had done a good job, was effective, cheap, and easy to install, but had also caused ozone depletion. Regarding fire protection, the eradication of halon left a gap which was filled by water mist.

An eco-friendly solution

Now, what makes a water mist sustainable and eco-friendly? Firstly, water mist systems use less water.

"Using less water means less water has to be drawn from drinking water resources", says Henrik Bygbjerg, Global Director R&D, Service, EHS&Q at Danfoss Fire Safety.

Water-based fire extinguishing systems make up the largest share of the extinguishing technology sector. Water mist systems use up to 85% less water than sprinkler systems and are either connected to the mains or a tank. If they are connected to a tank, the tank does not need a lot of expensive square meterage. The other option, using the mains and thus the existing infrastructure makes water mist systems so attractive for end users. If they choose water mist, they get a system which protects the building and increases the level of life safety. This is done by attacking the fire without the usage of harmful substances and uses less water which reduces possible damage.

There are few comparisons between water mist and sprinkler systems. However, end users looking for a water-based fire protection system should be aware that traditional sprinkler systems are fed from a water tank which has an enormous amount of water sitting there for sometimes years on end, not being used. So, with a smaller tank or a connection to the mains there are space savings as well as cost.

Water mist is also quick to install and easy to retrofit, and often integrated into existing buildings. When it comes to system longevity, stainless steel components are often the best choice. This isn't mandatory, but it prevents corrosion which is not only beneficial

for the conservation of the system, but also lowers the risk of contamination. Michael Bindreiter, Head of Global Sales, Aquasys, states: "The use of high-quality corrosion-resistant stainless steel prevents contamination, supports a high hygiene standard and the longevity of the system."

Reducing business downtime

Another factor is hazardous environments. When a fire breaks out in such areas 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. Luciano Nigro, president at Jensen Hughes Con. Europe - Milan, says: "In hazardous areas the extinguishing water has to be picked up and disposed of after a fire which is a difficult job that becomes easier the less water there is. Due to the smaller droplets, the water discharged from the water mist system is much less in quantity and therefore is easier to contain and much less expensive to dispose of."

So, the smaller the droplets the quicker they evaporate, which results in more cost savings because there could well be less downtime for businesses due to less water damage, and less effect on the environment. Water mist can also fill small areas that sprinklers simply cannot, and it is permanently discharged so the area is continuously fed with fine droplets. All this leads to a massive cooling effect that prevents re-ignition and a shielding of heat radiation. As we begin to see people look to eco-friendly solutions, more buildings are being built with the environment in mind. One of these buildings is the Green Pea, a four-storey multi-purpose-center in Turin, Italy, with a focus on eco-friendly retail and dining. It is being built based on the principles of sustainable architecture with minimal impact on the environment. VID Fire-Kill together with their Italian distributor Bettati Antincendio will partake in the re-development of the building. "Here, environmental-friendly firefighting meets the principles of sustainable



The Green Pea / Bettati Antincendio

architecture as the aim is to impact the environment as little as possible", say Alex Palle, CEO at VID Fire-Kill.

The Green Pea has been devised as a living structure with wood being the recurring theme. The entire building is covered with wood panels, vegetation being part of the composition. With the use of natural materials, the project requires a unique and effective fire protection strategy that will blend into the surroundings. And since the aim was to have a low impact on the environment, the customer was on the look-out for a matching fire protection system. Alex Palle explains: "The end customer knew that our low-pressure water mist system, with its low water and power consumption plus the concealed design was the perfect match for the mentioned requirements."

Creating a sustainable vision

There are other such cases too. In early 2019, the Alsik Hotel opened in Sønderborg, southern Denmark. Right from the concept stage, the high-rise building played a special role in a city that has made a commitment to becoming one of the most environmentally friendly places in Denmark. Known as 'Project Zero', the hotel has fully embraced the goal of the local community: sustainable growth and a carbon free future.

When planning and erecting the building, the aim was to optimise the supply and use of energy, water, and materials to ensure that running the hotel is as environmentally friendly as possible. In other words, it had to comply with the sustainability vision of the building and the city.

Sustainability is a big factor when people choose water mist, and we are also seeing people choose

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water mist to protect sensitive areas and high-tech equipment under sensitive environmental conditions, while at the same time reducing the risk of contamination. This is a constant challenge for operators of laboratories, data centres, hospitals, or semiconductor production facilities. In these surroundings the combination of the technological advantages of water mist and the use of high-quality stainless steel, especially for pipes but also for all other components that come into contact with water, are the main benefits of the system.

A compliant system

There are other industrial sectors that have set out to protect the environment like water mist manufacturers, only in different fields. In 2016, the water mist manufacturer Marioff provided the fire protection system for a machinery space within a renewable-energy power plant in Carmignano di Brenta, a small town in Padua, Italy. The co-generation plant, which is operated by Onenergy srl, is run on animal fats (liquid biomass) producing 1000 kilowatts of electricity and 500 kilowatts per hour of thermal energy. The aim was to install a system which is compliant with the idea of sustainability and provides fire safety which does not harm humans when in operation.

Massimo Ferretti, Marioff's area sales manager, explains: "The customer was very keen to have a water mist system which is safe for people and protects the plant. This meant the impact on the production plant in case of an emergency would be minimal. Our system has respect for environment and there are no disposal costs for the extinguishing agent." There are many more examples of the one Massimo gives, people are beginning to look for environmentally friendly solutions.

Global climate change has been identified as one of the most important environmental challenge to be faced by humanity in the 21st century. In 2019, COVID-19 has caused humanity's ecological footprint to shrink. However, real sustainability can only ever be achieved by design, not disaster.



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