

TODAY'S SOLUTIONS for tomorrow's risks

WATER MIST SYSTEM

The EckoShield Low Pressure Water Mist Systems are designed according to the water requirements for controlling, suppressing or extinguishing the fire, and their specifications for storing the water required for extinguishing.

ADVANTAGES OF WATER MIST AS AN AGENT

- 💧 Significant reduction of water consumption
- 💧 Maintains the oxygen level
- 💧 Suitable for deep-seated hazards
- 💧 Prevention of re-ignition
- 💧 Compatible with electronic equipment
- 💧 Effective on flammable liquid fires
- 💧 No sealing off area required
- 💧 Effective against smoke
- 💧 Minimal water damage
- 💧 Low cost and ease of re-filling
- 💧 Wide application versatility
- 💧 Smaller pipe sizes installation
- 💧 Environmentally friendly
- 💧 Ease of full-scale test
- 💧 Adaptable for local application and total flooding

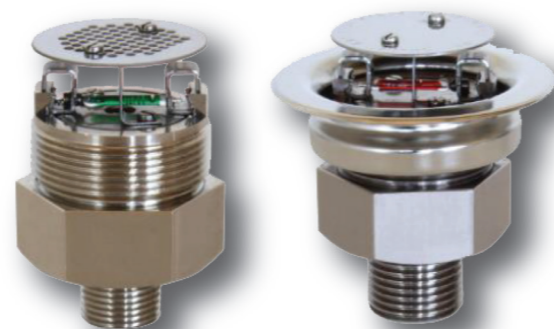
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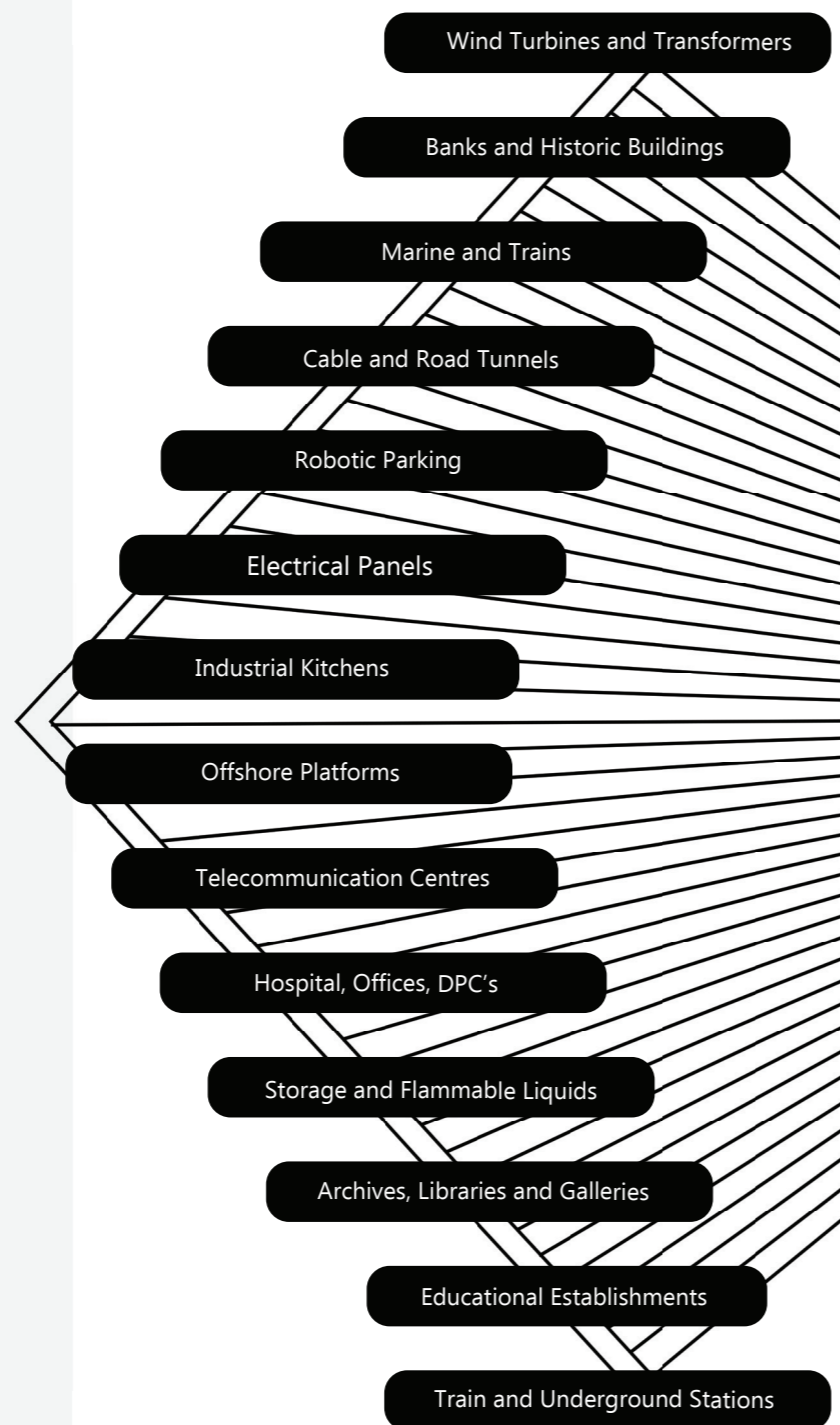
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NOZZLES



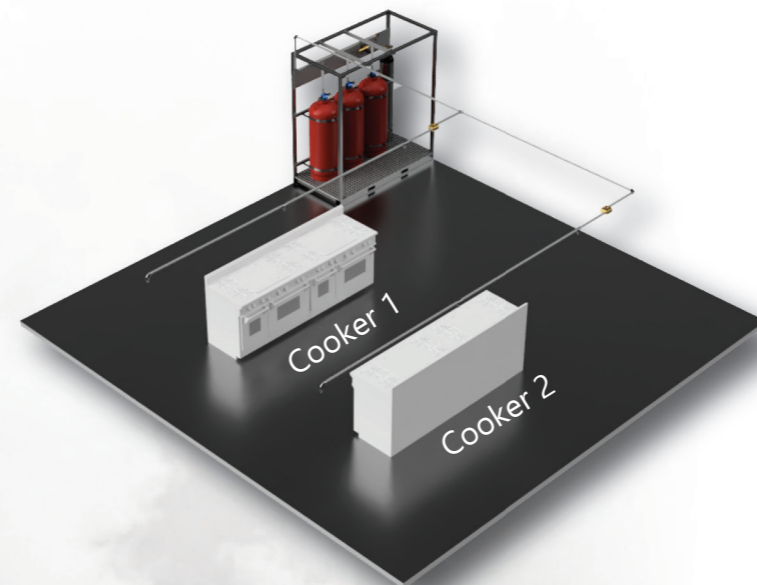
SYSTEM APPLICATIONS



LOW PRESSURE WATER MIST SUPPRESSION SYSTEM

One of the most popular and fastest growing extinguishing systems, thanks to the benefit of water as an extinguishing agent, the adaptability of all components and our system's compliance with the most stringent quality standards.

MULTIPLE RISKS



This system is based on transforming water into a fine water mist spray through dedicated nozzles, which causes no potential environmental or personnel risk. This results in a situation where personnel do not necessarily need to evacuate the area when the system activates.

The water mist is applied to a fire to reduce two of the three elements required for combustion this is done by oxygen dilution and producing cooling in the combustion zone.



WATER MIST SYSTEM PURPOSE



FIRE CONTROL

Limiting the advance of the fire until manual extinguishing intervention. Extended discharge.



FIRE SUPPRESSION

Sharp reduction in the rate of heat emitted and limits resurgence of the fire during the discharge time.



FIRE EXTINGUISHING

Significant or even complete extinguishment of the fire and the danger of re-ignition with discharges of approximately 10 minutes long.



FIRE BARRIER

Prevention of fire spreading to other sections, as well as suppressing smoke and other gases resulting from the extinction.



HEAT RETENTION

Absorption of heat produced in the vicinity of the protected object, plus assisting with extraction of smoke and gasses generated.



OVERVIEW LOW PRESSURE WATER MIST SUPPRESSION (LPWMS) SYSTEM

The low pressure water mist effect is achieved by using compressed gas to pressurise a water cylinder which in turn forces the water through the system and the nozzles. The nozzles create the water mist (fine water droplets) thus creating a highly effective extinguishing system which uses ± 80% less water per discharge than any conventional sprinkler.

The above is achieved at a pressure of below 12 bar, with the system typically operating at about 10 bar, with a flow rate of about 45 liters per minute. The LPWMS System uses single fluid technology operating with a dry pipe open nozzle and a Class I droplet size (< 200 Micron) as classes in NFPA 50.



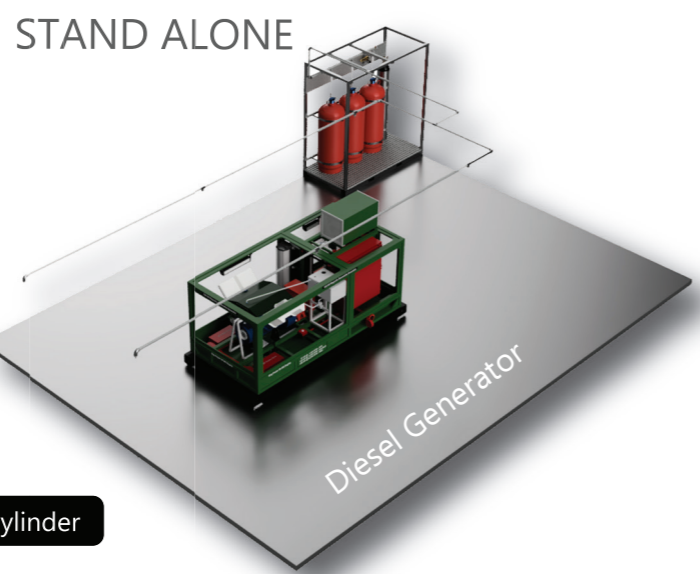
STAND ALONE
LOW PRESSURE WATER MIST SYSTEM

In the EckoShield Low Pressure Water Mist Suppression Systems range, there are units specifically designed for each individual protection requirement. Systems are designed according to the water requirements for controlling, suppressing or extinguishing the fire, and their specifications for storing the water required for extinguishing.

For micro-drop discharge, FireKill™ Denmark has developed a range of discharge nozzles with a specific design for each specific risk, according to the various tests performed in European laboratories. These designs can be adapted to both local applications and total flooding, fitted with open or closed nozzles.

The system has both low- and high-pressure cylinder banks which store the extinguishing agent (at low pressure) and propels it via pressurised (high pressure) nitrogen. The system can also operate with electrical or diesel motor pumps. These propel the water contained in tanks and are appropriate when larger amounts of water are required to suppress / extinguish the fire. The pumps can be powered with engines of various power ratings which can be tailored to meet a customer's protection needs.

Actuation by electrical or pneumatic components or manual activation can be complemented for any system for added safety. The EckoShield LPWMS system ensures more efficient coverage of hazards than could previously be protected by sprinklers. It can also be installed in other hazardous areas with more specific features, such as escalators, electrical transform-ers, generator rooms, data centers, etc.



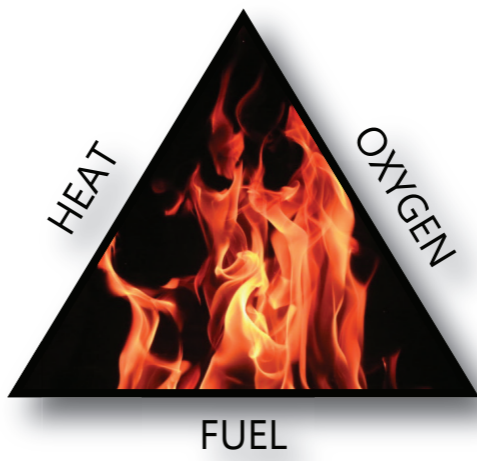
PUMP DRIVEN



USES OF A LPWMS SYSTEM

Properly designed water mist spray system can be effective on both liquid fuel (Class B) and solid fuel (Class A) fires.

Experiments showed that water droplets smaller than 400 microns are effective for extinguishing of Class B fires, whereas larger droplet sizes are effective for Class A combustibles.



*Subject to Change without prior notice.
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NFPA 750 (2012)

SCOPE (EXTRACT) [1.2]

This standard encompassed the design and performance requirements for water mist systems for use as fire control and/or extinguishing systems designed and installed per FM Global Property Loss Prevention Data Sheets.

Due to the current state of water mist system technology, a comprehensive absolute standard for the testing of water mist system components is not possible. Since each water mist system is unique in its operation and design, the component testing of the water mist system shall be performed on a case-by-case basis.

While customisation of the component testing is necessary, the fire test protocols are generic and required for all water mist systems. The manufacturer's design calculations, stated performance requirements, as well as component functionality and reliability will be verified.



DEFINITIONS [1.9]

Water Mist
A water spray for which the $D_v 0.99$ (99% of the total volume of liquid), for the flow weighted cumulative volumetric distribution of water droplets, is less than 1,000 microns at the minimum design operating pressure of the water mist nozzle.

Water Mist System
A distribution system connected to a water supply that is equipped with one or more nozzles capable of delivering water mist, intended to control, suppress, or extinguish fires.

Dry Pipe Water Mist System
A water mist system using automatic nozzles attached to a piping system containing air, nitrogen, or other inert gas under pressure, the release of which (as from an opening of an automatic nozzle) allows the water pressure to open a dry pipe valve. The water then flows into the piping system and discharges through any activated nozzles.