SIEX PD

WATER MIST SYSTEM

FIXED EXTINGUISHING SYSTEM

with WATER MIST
EXTINGUISHING AGENT

DIESEL PUMPS

FIRE PROTECTION

IDEAL
FOR A HOST OF HAZARDS

The WATER MIST technology developed by SIEX is the most convenient, cost-effective and customizable solution for a multitude of hazards. Our systems are completely customizable to any project and are the ideal solution for fire protection in many applications, ensuring operation even when the fire conditions may involve a power outage.

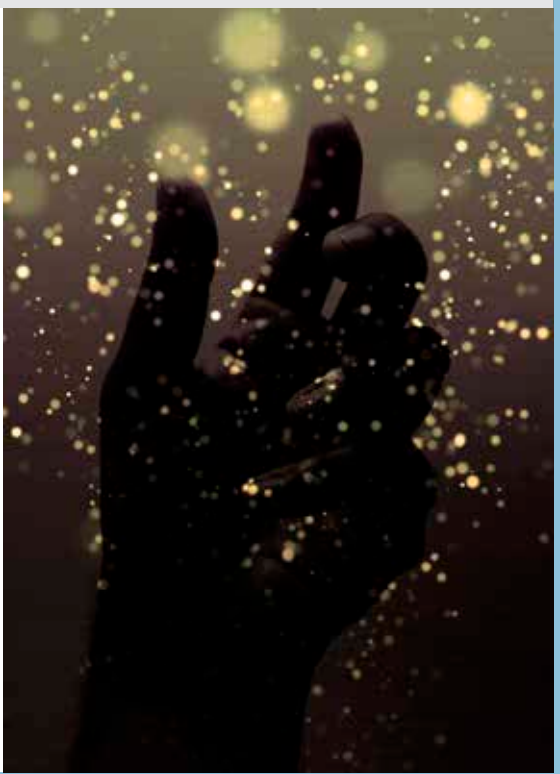
Using the SIEX™ WATER MIST SYSTEM involves great benefits for people involved in a fire, the property protected and the environment, since it is a completely natural agent which uses much less water than that used by other water-based fire fighting systems.

The SIEX water mist units equipped with DIESEL pumpsets help protect anything from large enclosures to small hazards. The system can act completely autonomously and automatically, ideal for hazards which are in difficult locations or have complicated features, where power supply is not guaranteed or is insufficient. The system provides complete structural protection against any risk.

It can be installed in special hazard areas such as escalators, transformers, electronic equipment rooms, etc., because unlike protection with sprinklers, its release method, small droplet size and speed create a mist with a high capacity to fight the fire without damaging equipment.

It is a step forward compared to traditional water-based extinguishing methods, thanks to its optimization. It is able to reduce the damage caused by fire and smoke, without requiring large amounts of agent that has been shown to be equally damaging:

- Suitable for a greater number of applications, including electrical and electronic equipment.
- Harmless to people
- Environmentally friendly and clean, with high availability and minimum consumption.
- It scrubs dust and particles from the atmosphere, preventing damage to equipment and facilitating evacuation.
- Rapid return to normal activity and reduced downtime.
- Easy to evacuate.
- Simple maintenance.



TESTS, APPROVALS AND CERTIFICATES

SIEX CONSTANTLY UNDERTAKES TO OBTAIN CERTIFICATIONS THAT MEET GROWING MARKET DEMANDS, OFFERING OUR CUSTOMERS THE MOST COMPETITIVE PRODUCTS AND ENSURING MAXIMUM EFFICIENCY.

Our equipment has obtained the major international certificates issued by the most prestigious agencies in its field: VdS, FM*, Lloyd's Register, DNV and Bureau Veritas. We have done so by testing all our products in internationally recognized laboratories such as VTT and SINTEF, thus objectively demonstrating the quality of our water mist systems.

They are approved according to the IMO MSC/Circ. 913 standard in marine systems, for use in local application and approval for use in public spaces, storage areas, cabins and corridors, as per IMO Resol. A.800 and IMO MSC.265 (84).
It is also approved as per the MSC/Circ. 1165 for machinery spaces.

It is also approved for land systems for use in public spaces (apartments, banks, schools, conference rooms, stations, churches, prisons, etc.), offices and cable tunnels according to standard and technical specification CEN TS 14972, and certified by VdS. The components have been approved by the VdS and CO MSC/ Cir. 1165 directives.

The SIEX water mist system has also been successfully tested for use in SINTEF-equipped tunnels.
Our company is also ISO 9001:2000 and ISO 14001:2004 certified for Quality and the Environment.

IMO MSC/Circ. 1165
IMO MSC.265(84)
IMO MSC/Circ. 913
IMO Resol. A.800
CEN 14972
*VdS / FM**
ISO 9001:2000
ISO 14001:2004
(*FM PENDING)

Purpose of water mist systems

The benefits of water as a fire fighting agent thanks to its ecological and clean character, combined with the adaptability of all components and overcoming the most demanding tests, making it one of the means of protection against the most demanding fire and fastest growing, fulfilling the following purposes depending on your application:

Fire control

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

Fire suppression

Sharp reduction in the rate of heat emitted by the fire during the discharge time.

Fire extinguishing

Complete extinguishing of the fire and danger of reignition with reduced discharges.

Principles of the extinguishing agent

- **The key principle of fire suppression with water mist is COOLING, drastically reducing the fire heat.**
- **The smaller droplet size, compared to traditional equipment, results in a larger exchange surface, which enhances the absorption of heat energy and generates greater amounts of vapour, which results in an additional effect of OXYGEN DISPLACEMENT.**
- **RADIATION ATTENUATION also takes place, as the spread of fire to other areas is limited and fire is prevented from spreading to intact combustible areas. This mechanism itself is not an extinguishing element, but it is essential for preventing the fire from spreading.**

ACTIVATION METHOD

Depending on the application to be protected, SIEX designs its equipment for dry pipe, preaction or wet pipe systems.

DRY PIPE SYSTEMS are those which are empty of water prior to detection and activation. They are installed with OPEN NOZZLES.

This mechanism can also be installed with CLOSED NOZZLES, in which case it becomes a **PREACTION SYSTEM**. The pipe is filled with water after fire detection, but the nozzle discharges only when the temperature increases (as a result of the fire) and the heat-sensitive bulb of the spray nozzle breaks.
This prevents false alarms and water mist is discharged only in the fire-affected area.

In **WET PIPE SYSTEMS**, the pipework is always charged with water pressurized at the pilot pressure, which is discharged when the heat-sensitive bulb breaks.

DRY PIPE SYSTEMS

PREACTION SYSTEM
(dry pipe systems)

WET PIPE SYSTEMS

COMPONENTS

DIESEL PUMPSET

SIEX-WM™ PD is our water mist system that uses a diesel driven pump to propel the agent. This positive displacement pump can be operated automatically or manually to activate the firefighting system, which may consist, in turn, of one or more main pumps depending on the required flow. Installations where water needs to stay in the pipe (wet pipe systems) also feature a jockey pump.

THESE SYSTEMS ARE THE MOST DESIRABLE WHEN POWER SUPPLY IS NOT GUARANTEED OR IS NOT ENOUGH.

SIEX develops pumpsets with flow rates from 32 l/min to 840* l/min to ensure minimum pressure in the most unfavourable nozzle and the flow required for proper protection.
To control the water mist system, the unit has a control panel that allows configuring and monitoring all system operations.

* For other flow rates, consult SIEX.

STORAGE TANKS

The pumping equipment uses tanks for water storage. They are ideal for protecting large areas, total flooding systems, local application or for the simultaneous protection of several separate hazards. The tanks are designed according to specific requirements. When water levels drop, it can be replenished, after filtering to avoid clogging and damage to system components due to solid particles.

NOZZLES

Designed using the latest technology for creating and spraying micro droplets, our nozzles are a critical system component. Specifically designed for each hazard (previously analyzed in-depth and comprehensively), they are checked and certified according to various tests performed in Europe's most prestigious certification laboratories, according to the most demanding and stringent guidelines. They can be adapted to both total flooding and local application, and installation can involve either open or closed nozzles.

These spray nozzles are approved for a wide variety of hazards, designed specifically for each type of application. For this reason there are different models with different flow rates, coverage angles and installation heights, depending on what needs to be protected.

The nozzles ensure a proper and homogeneous distribution of the water mist discharge. This is achieved thanks to the effect of pressure and the break up of water into micro-droplets, ensuring optimal spraying for controlling, suppressing or extinguishing every type of fire, resulting from extensive and deep in-depth research and development.

APPLICATIONS
FOR TOTAL FLOODING

Archives and libraries

Computer Rooms

Offices

Warehouses and factories

Shopping centres

Hospitals

Hotels and schools

Telecommunication systems

FOR LOCAL APPLICATION

Cable ducts

Transformers and turbines

Paint booths

Escalators

Kitchen hoods

Wind turbines

BENEFITS OF THE SYSTEM

The reason why water mist is becoming so widely used is the system's features, which make it the best solution for many different types of applications of varying sizes. On many other occasions, it is the only technically feasible solution due to its adaptability.

Also stands out from sprinklers:

ENVIRONMENTAL COMMITMENT.

It uses up to ten times less water. Energy consumption is zero because water mist is discharged by means of pressurized inert gas.

EASY TO INSTALL.

Thanks to the optimized use of water, smaller-diameter pipes are used. Installation is faster and more reliable because pipes can be bent.

HIGH SUPPRESSION AND EXTINGUISHING POWER.

The specific surface area of water mist systems is much greater than traditional sprinkler systems. Due to the greater active surface area, the exchange of fire heat is also higher.

LOCAL APPLICATIONS

The design of our nozzles allows water mist discharge to focus on a specific hazard, achieving optimum extinguishing efficiency at a lower cost compared to other total flooding systems.

SPECIAL APPLICATIONS

Water mist systems are flexible enough to be used for hazards with unique configurations such as: escalators, robotic parking garages, etc. beyond the protection scope of traditional systems.

SYSTEM APPEARANCE

In systems where piping is visible, the small and stainless steel pipe used has no adverse impact on the appearance of the area.
Fewer nozzles are required to cover the same hazards.

LESS DAMAGE TO EQUIPMENT

It reduces losses in materials exposed to the hazard, since the system involves no water soaking, unlike sprinklers, and it drags down smoke produced by the fire.

HARMLESS TO HUMANS

It is specially designed for occupied areas. Although the mist produced after discharge is intense, people can still breathe normally and evacuate the enclosure safely.

SIEX
C. Merindad de Montija nº 6
P.I. Villalonquéjar 09001
Burgos (SPAIN)

tlfno: +34 947 28 11 08
web: www.siex2001.com

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