



FIXED EXTINGUISHING SYSTEM

with WATER MIST  
EXTINGUISHING AGENT

# CYLINDER BANK SYSTEMS

FIRE  
PROTECTION

# AT THE FOREFRONT OF PROTECTION



SIEX WF B combines the benefits of water as an extinguishing agent with the most innovative advances to achieve fire protection causing the least possible damage and exceeding the highest expectations. The basic aim is to achieve the highest efficiency in fire protection while ensuring responsible and sustainable use of water.

The SIEX water mist range includes units specially designed for each specific protection need. They adapt to the requirements for the control, suppression or extinguishing of fire, addressing any specific project limitations.

The CYLINDER BANKS store the extinguishing agent and propel it using pressurized nitrogen. Within the same assembly, some cylinders store water and other auxiliary cylinders store the propellant.



It improves on traditional sprinkler systems, suitable for more applications, many of them with special features. In addition, the resumption of activity after discharge is much less expensive and faster thanks to the minimal impact involved, since the damage caused by water, smoke and fire is minimal.

SIEX, aware of current fire protection needs, has developed (through its R&D and innovation department) a technology that exceeds the traditional extinguishing methods and water mist systems available on the market. By spraying this substance in such small particles, the environment is cooled significantly without damaging the equipment. Likewise, the high-velocity discharge reaches the seat of the fire more effectively.



IT ENSURES MORE EFFICIENT COVERAGE OF HAZARDS PREVIOUSLY PROTECTED BY SPRINKLERS. IT CAN ALSO BE INSTALLED IN OTHER HAZARDS WITH MORE SPECIFIC FEATURES SUCH AS ESCALATORS, ELECTRICAL TRANSFORMERS, ETC.

# PURPOSE OF WATER MIST SYSTEMS

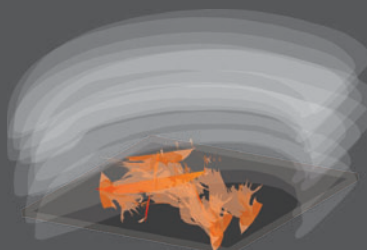
## FIRE CONTROL

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



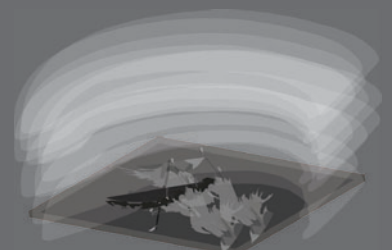
## FIRE SUPPRESSION

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.



# TESTS, APPROVALS AND CERTIFICATES

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.

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



***IMO MSC/Circ. 1165***

***IMO MSC.265(84)***

***IMO MSC/Circ. 913***

***IMO Resol. A.800***

***CEN 14972***

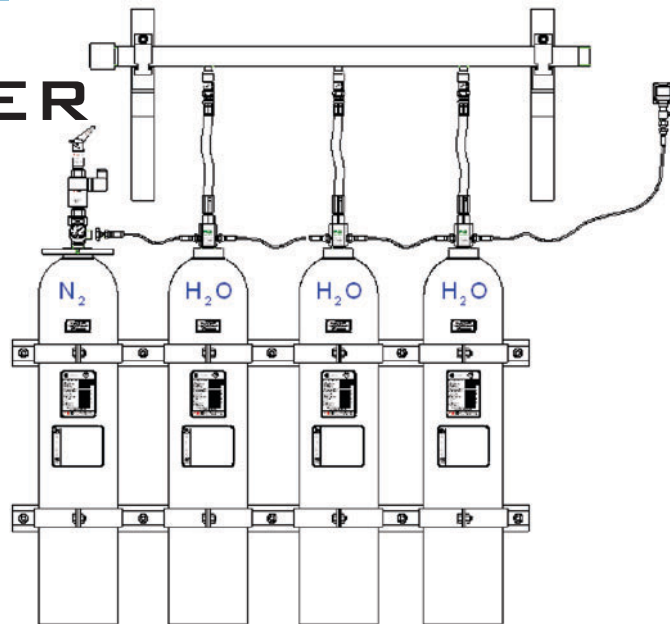
***VdS / FM\****

***ISO 9001:2000***

***ISO 14001:2004***

**( \* FM PENDING )**

# CYLINDER



## CYLINDER BANK

SIEX WF B with CYLINDER storage is the best option when water demand does not exceed 850 litres. We have a variety of cylinder sizes to optimize the assembly, depending on the hydraulic calculation. All cylinders feature an internal anti-corrosion treatment. Like all our systems, every component is manufactured to the highest quality standards and European directives.

To protect small enclosures or hazards, a modular unit can be used where the cylinder is already pressurized with nitrogen and requires minimal storage space. Cylinder banks can protect larger areas.

For these systems, we use only cylinders charged only with nitrogen at 200 bar, pressurizing the water cylinders.

One gas cylinder is required for the discharge of three water cylinders of equal size.

A nitrogen-charged pilot cylinder can be included for activating the entire system. A retarder can be connected to this component in order to facilitate personnel evacuation.

## 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.





# 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.



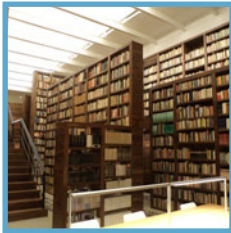
A modern office interior with glass walls and white chairs. The office is brightly lit with natural light from large windows. The floor is polished and reflects the surrounding environment. The overall aesthetic is clean and professional.

## WHAT ARE THE OPERATING PRINCIPLES OF THE EXTINGUISHING AGENT?

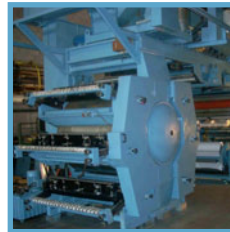
The key principle of fire suppression with water mist is **COOLING**, drastically reducing the fire heat. The smaller droplet size, compared to traditional equipment, results in a larger exchange surface, which enhances the absorption of heat energy and generates greater amounts of vapour, which results 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.

# APPLICATIONS FOR TOTAL FLOODING



*Archives  
and libraries*



*Computer  
Rooms*



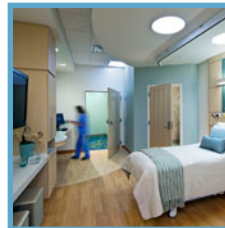
*Offices*



*Warehouses  
and factories*



*Shopping centres*



*Hospitals*



*Hotels  
and schools*



*Telecommunication  
systems*

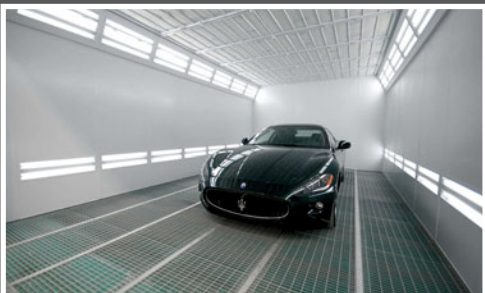
# FOR LOCAL APPLICATION



*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.

## **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.

## **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.

## **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.

## **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.

## **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**

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