HI-FOG®
water mist fire protection

Fire protection with care

HI-FOG® for hospitals

MARIOFF

Protecting people, property and business continuity

See animation demonstrating the HI-FOG® system in a hospital environment.

www.youtube.com/watch?v=BRUInyA19Zc

When a fire occurs in a hospital, the safe evacuation of patients is a top priority. An automatic fire suppression system allows additional time for evacuation before circumstances become life-threatening.

Rapid recovery after a fire is also essential. With fast control and localised suppression of fire, HI-FOG®, keeps both damage and downtime to a minimum. As it uses only a small amount of water, HI-FOG® is also ideal for buildings which lack an adequate water source.

HI-FOG® cools surroundings, blocks radiant heat and reduces the oxygen which feeds fire.

HI-FOG® allows additional time for evacuation. Safe evacuation before circumstances become life-threatening is vital for patients with reduced mobility.

Fire destroys commercial assets worth billions every year, with the ensuing damage caused by both fire and the water used to fight it. Traditional water-based systems rely on wetting to fight fire, but the flooding is often devastating and can spread far beyond the fire area. Business is then lost because weeks or even months can pass while the damage is repaired.

There is, however, a way to make water nearly ten times more effective when fighting fire. HI-FOG® suppresses fire by discharging a fine water mist at high velocity, which swiftly controls and suppresses a fire while also minimising smoke-related damage.

In a controlled demonstration, one HI-FOG® nozzle discharged around 380 liters (100 gallons) of water in 30 minutes using a gas-driven pump unit. A traditional sprinkler system, in turn, discharged some 3,600 liters (951 gallons) from a single nozzle within the same time period.

With minimal clean up, HI-FOG® helps to reduce downtime so hospitals can get back to operating and functioning in a normal manner as soon as possible.

HI-FOG® can protect the entire hospital:

- Patient rooms
- Operating theatres, imaging, ICU
- Offices and staff facilities
- Kitchens and ducts
- Lobbies and corridors
- Technical areas, IT rooms, laundry facilities and storages
- Car parks

Experience yo

Marioff is the world's largest supplier of water mist fire protection systems. As the pioneer of this technology, Marioff has unrivalled experience in installing fire protection systems for buildings both new and old.

Today, HI-FOG® protects hospitals and care homes the world over. Each installation benefits from the know-how Marioff has gained from thousands of installations on land and at sea.

HI-FOG® system has allowed Koukkuniemi to overcome its challenging location and provide

Koukkuniemi Care Home
Cost effective scalability

Koukkuniemi is the largest care home in the Nordic countries, housing approximately 900 elderly people.

Koukkuniemi wanted to improve the fire safety of patients, as well as the buildings that were deemed high risk. The oldest of the buildings were built in the 1950s and 60s, at a time when anti-combustible materials were not used, and, although they have since been since renovated, the chances are they would burn very quickly. These risks led to the care home needing to ensure that everyone could be safely evacuated in the event of an emergency.

The care home is located on a peninsula, which means that the mains water supply only flows in one direction. HI-FOG® was the most cost effective option, because it can protect the entire complex with a single pump station and compact water tank, whereas a traditional sprinkler system would have required separate pump units for each building and a duplicate water supply or large water reservoir.

HI-FOG® was installed in the older buildings with ease despite the lack of space. The system now protects all seven residential buildings, an administrative center, a maintenance center and a cafeteria, as well as a kilometre-long service tunnel that connects all the buildings.

During 2013 Koukkuniemi is expanding its complex to include a new building and the complete refurbishment of an existing one, and the HI-FOG® system will be effortlessly expanded to cover this new development using the same pump.

ou can rely on

state-of-the-art fire protection to its residents.

"It was possible to protect the entire hospital complex with a single pump station. Thanks to the easy installation, HI-FOG® really was our only choice."

– Leo Koski, Technical Unit Supervisor, Koukkuniemi Care Home.

HI-FOG® sprinklers activate when ambient temperature is high enough to break the bulb.

Koukkuniemi's Technical Unit Supervisor Leo Koski has been very pleased with the system and its easy maintenance. As HI-FOG® uses very little water it is easier to flush the pipes during maintenance, which, in turn, results in a better quality of water and a longer life cycle for the pipes.

The installation of the HI-FOG® system has been carefully planned to ensure minimal interference in the hospital's daily operations.

HI-FOG® is easily expanded to cover Koukkuniemi's new buildings. Installations can be combined using the same integrated system.

HI-FOG® tubing can easily fit into tight spaces.

> *"HI-FOG® fulfills the two primary requirements at Motala Hospital: conserving space and minimizing water consumption."*
>
> – Jonathan Kristiansson, Director of Building Projects for the county of Östergötland.

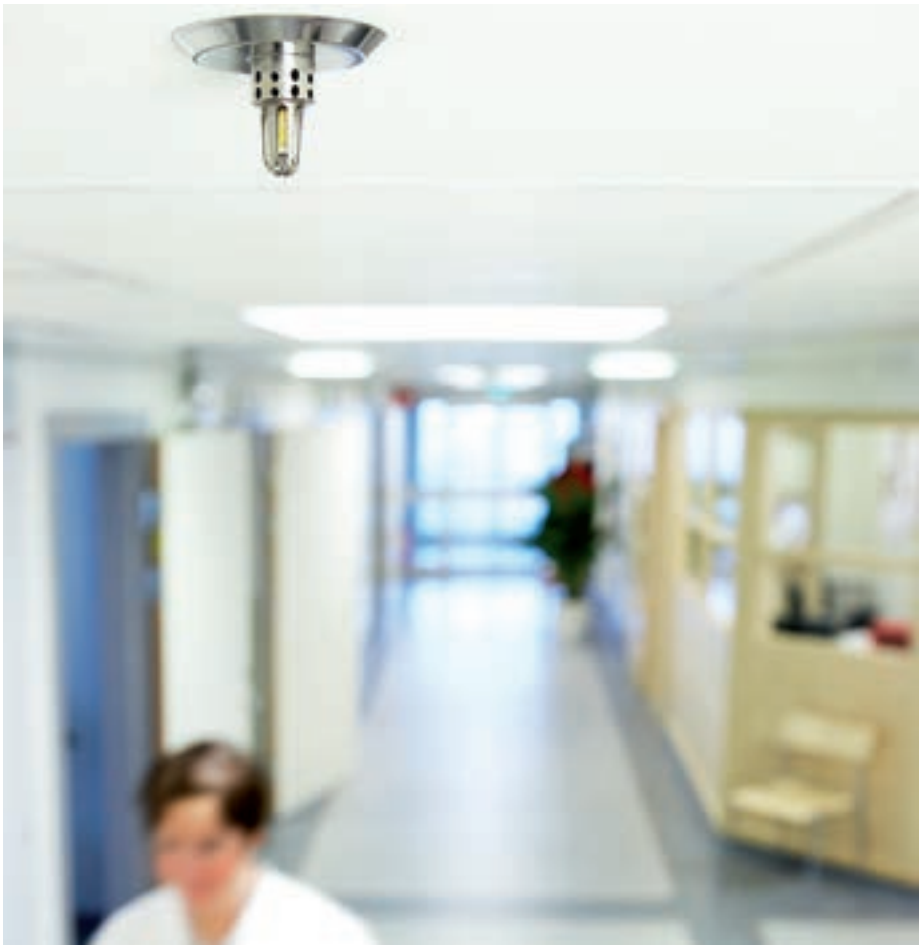
Motala Hospital
Flexible installation throughout the renovation process

Specialising in orthopaedics and internal medicine, Sweden's Motala Hospital is Western Östergötland's centre for general medical practice.

When embarking on a complete renovation, the hospital needed a high-performance and flexible fire protection solution which would not complicate the modernisation of the 35-year-old facility. It could not access the local water supply for the purposes of fire protection, so the County Council wanted a solution that would not require large and costly water reservoirs.

HI-FOG® was chosen to protect the entire hospital, as it takes up minimum space and uses a very small amount of water. The system is fed by a compact, standalone water tank and pump unit that is installed in a basement, leaving plenty of room for patient care and maintenance activities.

With the HI-FOG® system fulfilling its fire protection requirements for years to come, Motala Hospital is able to safely continue its legacy of healing the community.



Credit Valley Hospital
An aesthetically pleasing design

Credit Valley Hospital services over a million people in the area of Mississauga, Ontario, and a stunning 279m² (3,000 ft²) lobby, featuring arched wooden beams which sweep across the ceiling, welcomes patients and visitors. These design elements made fire protection particularly important, and its composition and installation crucial.

Designers had to identify a fire suppression system that could quickly suppress fire and aesthetically blend in with a lobby that consists of a number of tall and uniquely-shaped structures. Furthermore, the solution also needed to effectively protect people and property while simultaneously minimising water damage.

After passing a rigorous performance test at the National Research Counsel of Canada (the Ontario Fire Marshall deemed the test an "unqualified" success), Credit Valley Hospital installed the HI-FOG® water mist fire suppression system by seamlessly integrating spray heads into light fixtures using small

"We decided to install the HI-FOG® system in our hospital because we could compensate the authority's structural fire protection requirements. We experienced a live demonstration at Marioff's Berlin office which convinced us of HI-FOG®'s performance."

– Thomas Schuder, Divisional Director of Technical Equipment and Installation, Ernst von Bergmann gGmbH.

Ernst von Bergmann gGmbH
Protecting people and property

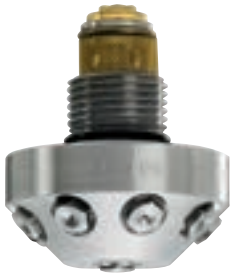
The Ernst von Bergmann Hospital is a future-oriented hospital which focuses on specialised medical services. The hospital was therefore in need of a fire protection solution that not only protects the patients and personnel, but which can also guard the actual building and its life-saving contents.

A live demonstration at Marioff's premises convinced the customer of HI-FOG®'s performance and minimal water use. Furthermore, the hospital could compensate the authority's structural fire protection rules with HI-FOG®. In Germany, it is mandatory to fit fire-rated materials in every escape route which, in this case, would have meant the installation of costly measures such as fire-resistant windows. The HI-FOG® system eliminated the need for a number of these procedures without compromising on safety.

The system has now been installed in many areas of the hospital, including the crucial radiation treatment machines and laboratories, as a part of an ongoing renovation.

stainless steel tubes which disappear into the wooden beams. The small nozzles and intricate installation materials mean that the system is unseen to the naked eye but provide the very best in fire protection.

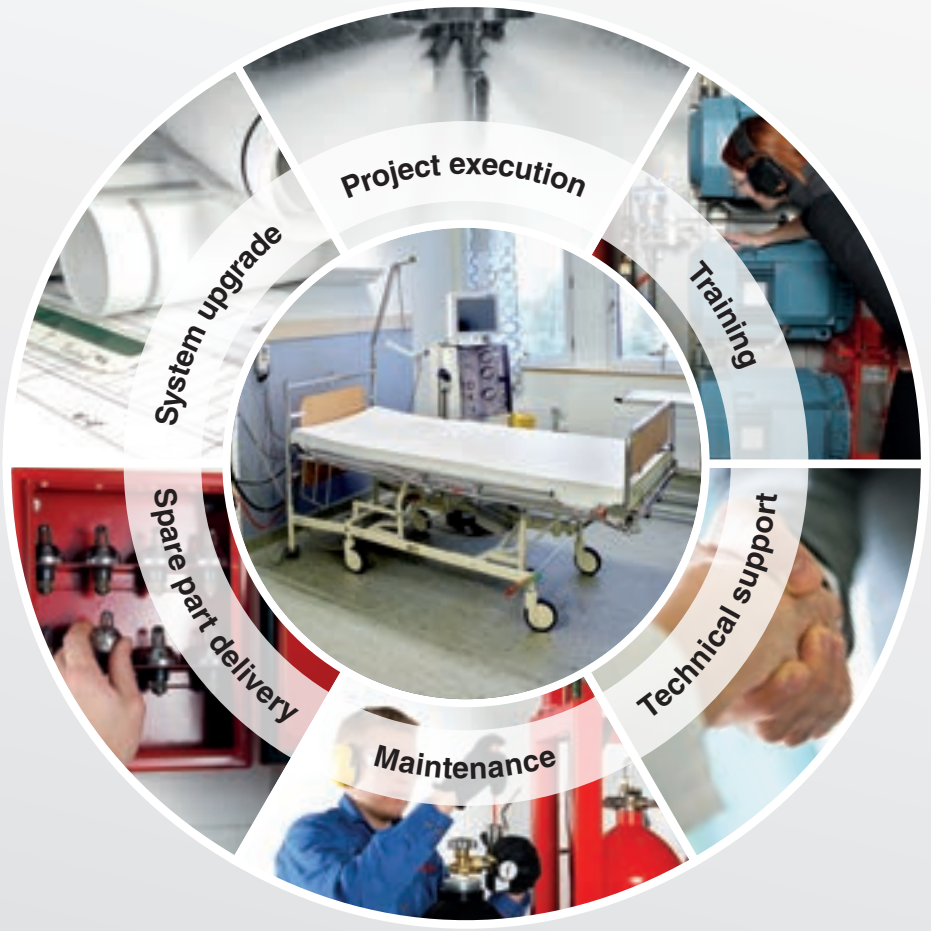
Minimising structural impact was paramount in this case, and HI-FOG® has blended perfectly with the lobby's architecture.



HI-FOG® spray head

HI-FOG® 1000-series sprinkler

HI-FOG® 2000-series sprinkler



Marioff supports its customers throughout the life cycle of its installations. Our After Sales & Services department features dedicated professionals who are ready to support the HI-FOG® systems worldwide. Marioff takes a proactive approach with each project, assisting customers in every way possible to ensure they are fully protected.

Ensuring operational reliability

Marioff Services extend from the rapid delivery of spare parts and fully optimized maintenance, to turnkey system upgrades and customized, long-term service agreements.

The commissioning of the system is carried out by skilled service engineers in order to ensure compliance with design specifications. Preventive maintenance, troubleshooting and 24-hour emergency service are all designed to ensure rapid response times worldwide.

MARIOFF

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