

Fire protection with care

HI-FOG® for hospitals





Protecting people, property and business continuity



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

www.youtube.com/watch?v=BRUlnyA19Zc

When a fire occurs in a hospital, the safe evacuation of patients is a top priority. 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 that lack an adequate water source.



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



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 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. HI-FOG® suppressed the fire using nearly ten times less water compared to the traditional system.

With minimal clean up, HI-FOG® helps to reduce downtime so hospitals can get back to operating.

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 you

“ 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

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 around the world. Each installation benefits from the know-how Marioff has gained from thousands of installations.



HI-FOG® system has allowed Koukkuniemi to overcome its challenging location and provide state-of-the-art fire protection to its residents.

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 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 water mains 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 nine residential buildings, an administrative center, a maintenance center and a cafeteria, as well as a kilometre-long service tunnel that connects all the buildings.

Koukkuniemi's Technical Unit Supervisor Leo Koski has been very pleased with the system and its easy maintenance. As

You can rely on



HI-FOG® is easily expanded to cover any new developments. Installations can be combined using the same integrated system.



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

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.

“ In case of a fire situation, hospital personnel can evacuate patients faster when there is less smoke. Water mist helps to minimize smoke and improves the safety of our patients and staff.”

– Ari-Pekka Laine, Safety Manager, Central Pori Hospital



© Esa Kyyrö



© Esa Kyyrö

Central Pori Hospital Ensuring safe evacuation

The Central Pori Hospital, Finland, added a new building for newborn intensive care, maternity nursing rooms and patient wards. HI-FOG® was needed to ensure critical patient and hospital personnel safety by allowing quick evacuation times.

The project was a turnkey delivery including the sprinkler control sys-

tem, installation, commissioning, training and a service agreement.

Installations were easy and fast, due to the small-dimensioned pipe sizes. Bent pipes were installed precisely to the structures bringing flexibility, which is often needed during the construction time and layout changes.



“ 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

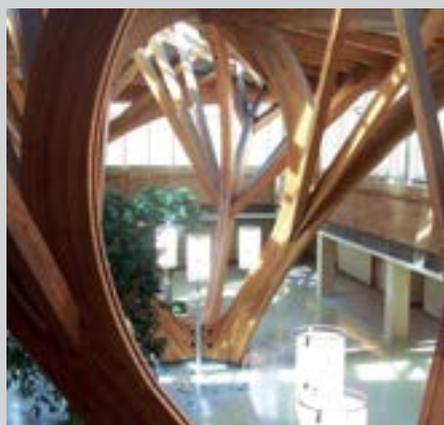
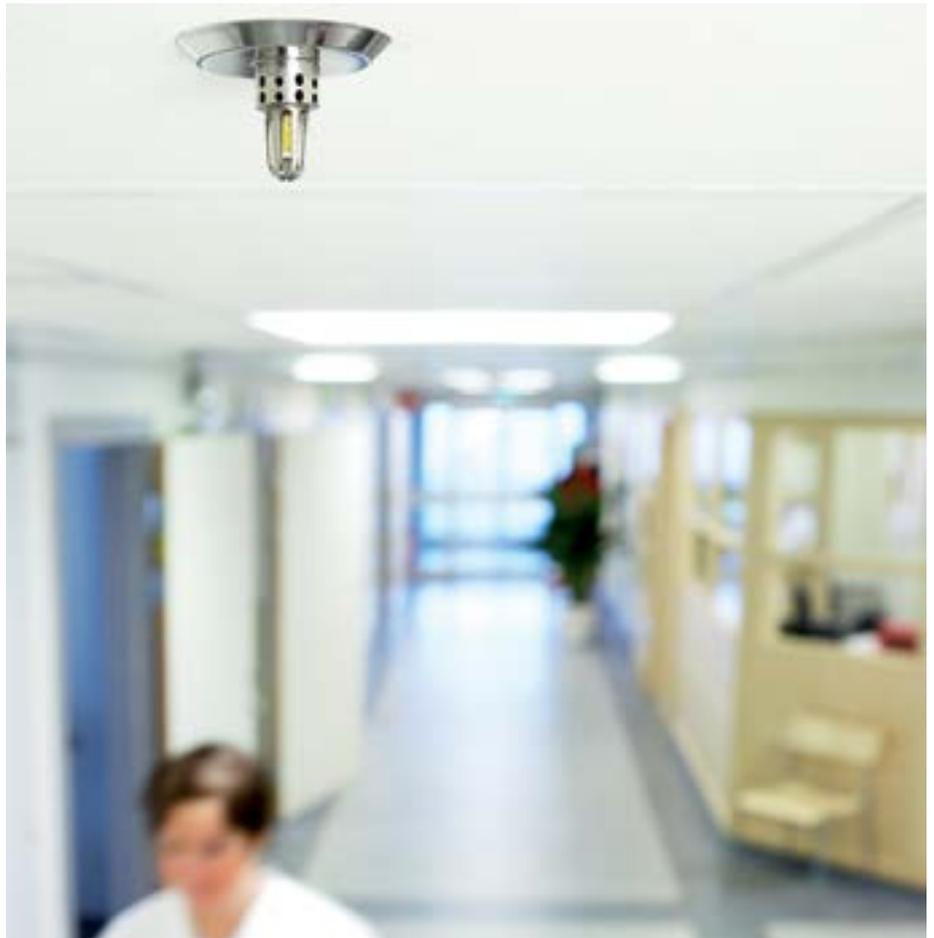
Flexible installation throughout the renovation process

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 that would not complicate the modernisation of the 35-year-old facility. The hospital 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 Council 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

Ernst von Bergmann Hospital gGmbH *Protecting people and property*

The Ernst von Bergmann gGmbH is a future-oriented hospital that focuses on specialised medical services. The hospital was 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. Minimising structural impact was paramount in this case, and HI-FOG® has blended perfectly with the lobby’s architecture.



© Farrow Partnership Architects Inc.



HI-FOG® spray head



HI-FOG® 1000-series
sprinkler



HI-FOG® 2000-series
sprinkler



Operational reliability through HI-FOG® Services

Just as any system needs care, so does HI-FOG®. Our services extend from the optimized maintenance and original spare parts to turnkey system upgrades and modernizations.

Corrective maintenance

Thanks to global partner network, Marioff is able to provide local field service engineers on-site to repair the system in timely manner to ensure minimal downtime. Original spare parts are used to secure reliable functioning of the HI-FOG® system.

Preventive maintenance

Timely and well-planned maintenance procedures result in increased system reliability. HI-FOG® service contracts provide long-term maintenance budget predictability and cost efficiencies through optimized maintenance procedures.

Upgrades

The performance and capability of the HI-FOG® system can be improved by

upgrading the existing system. System upgrade is a sustainable way to respond to new fire safety regulations or extended protection requirements.

Modernization

The new technological developments can be implemented to ensure new features and functionalities. Modernization also extends system life time by replacing obsolete technology with new optimal solutions and ensuring the availability of spare parts.

Training

All HI-FOG® operators are trained to monitor the system, perform regular checks and basic troubleshooting, reset the system after activation and operate it in case of an emergency.



Head Office

Marioff Corporation Oy
Plaza Business Park Halo
P.O.Box 1002, FI-01511 Vantaa, Finland
Tel. +358 (0)10 6880 000
Fax +358 (0)10 6880 010
Email: info@marioff.fi

Information on Marioff group companies, agents/distributors and references can be found at www.marioff.com.

Marioff Corporation Oy reserves the right to change or modify the information given in this brochure, including technical details, without notice. HI-FOG® and Marioff® are registered trademarks of Marioff Corporation Oy. Marioff is a part of UTC Climate, Controls & Security, a unit of United Technologies Corp. (NYSE:UTX).

All rights reserved. Reproduction of any part of this document without the express written permission of Marioff Corporation Oy is prohibited.