

Case story | SEM-SAFE® high-pressure water mist system

Katriina Hospital in Finland

Protecting life with SEM-SAFE® high-pressure water mist system for fire fighting

Danfoss Fire Safety A/S



Katriina Hospital is a medium-size hospital owned by and located in the City of Vantaa, the fourth largest city in Finland. This hospital consists of eight patient wards, a daytime operating facility and a geriatric outpatient clinic. The hospital also houses the Katriina Health Center for the area residents.

History

The original wing of the hospital was commissioned in 1959. The municipal nursing home, Katriinakoti, started its operations then, and had its name changed to Katriina Hospital in 1969. The hospital was expanded with a new wing in 1979-1980 and underwent major renovation works in 1991-1994 and in 2005. In 2010-2011, the hospital was fitted with SEM-SAFE® high-pressure water mist system for fire fighting from Danfoss.

Building description

The hospital consists of two separate buildings connected by a multi-level walkway. The old building has three stories and a basement, and is constructed of cast concrete walls and ceilings. The new building, consisting of four stories and a service basement, is made of bricks and mortar. The total combined floor area of the hospital is 12,700 m².



SEM-SAFE® high-pressure water mist system

The hospital was fitted with a SEM-SAFE® high-pressure water mist fire fighting system. The installation work commenced in October 2010 and was completed in March 2011, one month ahead of schedule. The hospital was in full operation 24/7 at the time of the installation work. It was absolutely crucial to cause as little disruption as possible to the patients, the staff and the hospital's operative environment in general.

The system is made up of the SEM-SAFE® electric pump unit, 5,000 m of pipes (Ø12 mm, Ø22 mm and Ø 28 mm) and 1,130 nozzles.

Approving authority

The system design was approved by Alarm Control Alco Oy Ab, one of the three inspection companies accredited by the Finnish Safety Technology Authority. The design was then examined and inspected by the Keski-Uusimaa Provincial Fire Department. The final installation was tested and inspected by Alarm Control Alco Oy Ab. Fire test criteria were not needed at this point, as the Danfoss fire test reports were provided in late 2008 to Inspecta Oy (the largest inspection company in Finland).



The benefits of SEM-SAFE®

Water mist was chosen instead of conventional sprinklers due to minimized water damage upon system activation and less troublesome retrofit installation.

Director of Public Construction and management of the Technical Board of the City Committee were:

- Very impressed by the small piping diameters, the visual appearance of the nozzles and the seemingly strong resistance to accidental discharge or vandalism.
- Extremely impressed with the Danfoss distributor in Finland, Provacuum Oy, with regard to the positive attitude and capability of adapting to the very busy hospital environment and interacting with the patients, staff and administration of the hospital.



SEM-SAFE® high-pressure water mist nozzle with stainless steel Ø12 mm pipe.