

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

Budapest Airport (ANS-III)

Fire protection of basement and underground car park
Danfoss Fire Safety A/S



ANS-III represents the newest addition to Budapest Air Traffic Control Centre. This provides the Hungarian Air Navigation Services with modern means of communication between air traffic controllers and the aircrew. It ensures international recognition for the Hungarian Air Traffic Control Navigation as well as laying the foundation for the development of a state of the art air navigation knowledge and training centre.

Building description

The new blocks cover nearly 10,000 m² and consist of 3 floors and a basement area. The Air Traffic Control Centre has one floor basement, with a surface of approximately 3,000 m², which includes mechanical rooms, storage areas, locker rooms, corridors and underground parking area. The entire basement is completely protected with the SEM-SAFE® high-pressure water mist system from Danfoss.



SEM-SAFE® high-pressure water mist system

The customer was interested in a water mist system that could provide optimal fire fighting, as well as compensate for the lack of a smoke extraction system that should have been installed according to local regulations. By using a water mist system, there was no need to have a smoke extraction system. In the beginning of 2012, the customer contracted TÚZÓR Ltd, Danfoss distributor in Hungary for the installation of the SEM-SAFE® high-pressure water mist system. The scope of work was to replace a water based fire fighting system already approved.

Classification of protected areas:

- Corridors, hallways, lobby, mechanical rooms: OH1 up to 6 m ceiling height
- Garage: OH2 up to 3 m ceiling height
- Warehouse, storage areas: OH3 up to 6 m ceiling height

For the protection of the entire basement area, a unit with 6 pumps and 305 nozzles were installed. In addition, 29 section valves, which are operated by the fire alarm system, were installed in the water mist pump room.

The benefits of SEM-SAFE®

SEM-SAFE® high-pressure water mist system provides multiple advantages and benefits. With only one system the entire basement area is protected. It provides rapid fire fighting and keeps deep seated fire under control, while efficiently suppressing fuel spills.



Minimal water consumption.

A convincing argument for the customer was the unique upright design of the SEM-SAFE® garage nozzle, which avoids the risk of accidental hit by cars as well as eliminates frost clogging in drop pipes and nozzles.

Having a cost efficient fire-fighting solution was important for the customer. The high spacing means fewer nozzles to be installed, therefore reducing installation costs. The unique multi-axial piston pumps are lubricated by water, therefore they require almost no maintenance. The pump unit is compact and its footprint occupies less than half the parking space needed for one car.

The compact section valves were easily integrated into the water mist pump room and are easily accessible. This provides a huge advantage, as the previous system installed had large section valves placed in the suspended ceiling area of changing rooms and storage room.

Approvals

The SEM-SAFE® high-pressure water mist nozzles are tested and accepted by VdS, an internationally recognized approval authority. Also, SEM-SAFE® successfully passed the fire criteria set by the local BM OKF (National Directorate General for Disaster Management-Fire Protection). During the public certification, a full scale test of the SEM-SAFE® high-pressure water mist system took place in the car park. All technical requirements were passed successfully.



High quality stainless steel pipe offers long life span, while the small pipe dimension ensures easy installation and integration as well as an aesthetic design.