



ALSION

- the largest project in Denmark using high-pressure water mist technology

The ALSION building was finished on 30 October 2007 and was opened by Queen Margrethe of Denmark. The building covers a gross area of 28,400 sq m and a total of 10 blocks. Each block consists of four levels and one basement.

The building has a three different applications:

University/education: 15,400 sq m

Concert hall of 1,795 sq m

Research park: 5,900 sq m

ALSION was made to create a unique environment in a unique building at a unique location to secure local & regional growth. Therefore, a unique fire protection system was chosen; the innovative Sem-Safe® Water Mist System. In addition, the Danfoss Semco high-pressure water mist fire protection system supports the ALSION vision with its future secured technology.

FIRE TEST CRITERIA. The system chosen for the ALSION project must comply with the European standard draft prEN 14972, prepared by the Technical Committee CEN/TC919 “Fixed fire fighting systems”, the secretariat of which is held by BSI.

The Sem-Safe® system was thus tested according to the fire test procedures described in above standard. The tests were carried out to prove that an automatic water mist system achieved better results than comparable tests carried out with a sprinkler system.

After successful testing, the Sem-Safe® system was approved by DIFT (Danish Institute of Fire and Security Technology) to comply with the European standard for water mist system PrEN TS 14972 for Ordinary Hazard Group 1.



The Sem-Safe® system

To protect the ALSION building, a Sem-Safe® high pressure pump unit was used. The type of nozzle used is our CEN nozzle with a 5.5 metre spacing at a height of 3 metres and a nominal release temperature of 57°C.

A total of 2,200 nozzles were installed

- 2,000 closed nozzles (wet system) – offices, corridors, restaurants, classrooms, etc.
- 200 open nozzles (dry system) – atrium, concert hall, etc.

There are a number of reasons as to why water mist was chosen over traditional sprinklers. Below is an extract of statements made by Torben Sten Hansen from the Danish consulting engineering firm Sloth Møller Rådgivende Ingeniører:

The water mist system fits well with the innovative “spirit” characterising the project. There are many reasons as to why water mist was chosen over a traditional sprinkler system.

First of all, the system is much more flexible to incorporate than the sprinkler system. It requires less space as the pipes are smaller. This makes it easier to incorporate the pipes in a way that makes them less conspicuous. The actual nozzle is also smaller than the traditional sprinkler nozzle and is therefore less conspicuous when mounted in the ceiling. In other words, a water mist fire protection system is more aesthetic and thus preferred by most architects.

Another heavy argument is that the solution is very economical. The water volume used in a fire situation is less than ten per cent of the volume used when a sprinkler system is activated. This means that a lot of water is saved. But what is more important is to limit the damage caused by the fire, which is the whole concept behind water mist.

The water mist is good for cooling down glass. It acts as a sort of “water film” which quickly spreads over even large glass surfaces, cooling them down.

The vision is to make a close connection between Research Park, university and culture by creating innovative and unique solutions. Water Mist is a direct result of this vision. It is a new innovative and effective method for fire fighting on land



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Water Mist

DANFOSS SEMCO A/S

FIRE PROTECTION

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