High Pressure Water Mist for protection of Laboratories and highly sensitive areas

Josef Hainzl
Aquasys Technik GmbH, Linz, Austria, j.hainzl@aquasys.at

Abstract

Usually, sprinkler systems are used to protect the typical rooms in a high-rise building like hotel rooms, office areas, atriums and other areas. Due to an increasing environmental concern with high water volumes used in high-rise buildings and the increasing requirement for efficient system designs as well as centralized plant engineering, a demand for optional firefighting systems has risen.

The aim of this study was to investigate if water mist fire protection systems could provide an equal level of protection compared to sprinkler systems, to minimize the water storage for fire protection and to minimize the wasted water after an activation and therefore to minimize the fire water provision and the linked disposal costs of this wasted water.

Additionally, we could use all the “basic” advantages of the water mist system, like smaller pipe diameters, in respect to the bulkhead connections, were you have to guarantee a fully tight system within these hazard areas! Also, the advantage of the corrosion resistant stainless-steel systems.

The essential advantages of an AQUASYS high-pressure water mist system could also be excellently used in this system; for example, the exclusive use of high-quality corrosion-resistant stainless steels supports the high hygiene standards. Due to the high efficiency of the AQUASYS high-pressure water mist system, the protection target could be achieved with a compact unit with 112 l/min flow rate.

Based on these facts we could provide a study to our customer(s) so that on the first view, higher costs compared to traditional systems, in total are higher due to higher operating expenses.

KEYWORDS: : water mist system, laboratories, high sensitive areas, hazard areas, fire water provision and disposal costs, stainless steel,

AQUASYS protects new laboratory in Berlin-Brandenburg with high-pressure water mist system

Abstract

The State Laboratory has been the first transnational state research institution in Germany to deal with a wide range of topics in consumer protection, radiation protection, animal disease control and disaster control for more than 10 years. In the four-storey building, 249 m² of laboratories with security level 3 are protected with a modern AQUASYS high-pressure water mist system.
In order to meet the special requirements of laboratory operations, the fire protection concept was implemented in close consultation with planners, authorities and the client.

Project period: 2018 – 2019
Cooperation partner: Caverion Deutschland GmbH
Project description:

- The water mist system is installed in a total area of 249m² and protects laboratory rooms as well as technical rooms
- The compact pump unit with a water flow of 112l/min serving a wet system divided into 11 sections
- Areas are equipped with closed nozzles
- The design of the system is in accordance to the requirements of VdS Installation and project management by local partner

KEYWORD: water mist systems, flammable liquid hazards, industrial premises, high sensitive areas, stainless steel, hazard areas