



Fire protecting aircraft hangars

Christina Linaa Hansen, Marketing Coordinator at VID FIREKILL looks at alternatives to foam fire suppression systems for aircraft hangars

The aviation industry presents numerous fire hazards, with aircraft hangars being particularly vulnerable due to the presence of flammable fuels and the close proximity of ignition sources to the aircraft. Hangar structures are designed for housing and maintaining aircraft and storing high-value equipment. A fire in an aircraft hangar can be catastrophic, jeopardising both the aircraft and people working there. Having the right fire suppression systems in place is crucial.

What is the concern with foam?

For decades, foam fire suppression systems have been used in aircraft hangars to extinguish fires involving flammable and combustible liquids. During recent years there has been a growing focus on these systems due to heightened concerns from aviation operators, insurance companies, and the general public regarding potential life safety hazards associated with their use. While these systems effectively control fires, they are not without risks. Foam discharge can have serious consequences, including damage to high-value aircrafts and their systems, requiring expensive repair or replacement of components, as well as harm to other hangar equipment. An additional consequence is the rapid

discharge of foam, which can quickly fill the hangar and create a dangerous situation for people inside.

Another concern with foam systems is the negative environmental impact. Research has shown that certain firefighting foams used to extinguish fires in hangars contain extremely persistent and harmful chemicals. Firefighting foams rely on a group of synthetic chemicals known as PFAS, also called 'forever chemicals', as they are non-degradable. Studies have linked these chemicals to a significant risk of contaminating groundwater and causing long-term health problems, including various types of cancer. In response to these issues, the 2022 edition of NFPA 409, the standard for aircraft hangars, introduced new alternative fire protection solutions for Group II aircraft hangars. This update has changed the foam requirements and has opened up the options for alternative fire suppression methods, allowing for safer and more environmentally-friendly solutions.

Environmentally-friendly fire protection

VID FIREKILL, a Danish company and member of the International Water Mist Association (IWMA), specialises in creating

advanced water-based fire protection solutions. With a strong focus on sustainability and environmentally-friendly solutions, VID FIREKILL is positioned as a frontrunner in the industry.

One of the unique solutions offered by VID FIREKILL is the low-pressure water mist system developed for the protection of aircraft hangars. The system features telescopic nozzles designed to suppress and mitigate fires and prevent damage to aircraft surfaces located directly above or adjacent to a fuel fire. "Unlike foam-based firefighting systems, the FIREKILL™ system only uses water, effectively suppressing fires without filling the hangar with foam, thereby reducing the environmental impact and avoiding harm to people or high-value aircraft," said Miguel Martinez CCO at VID FIREKILL.

Martinez explained further: "Low-pressure water mist systems are designed to fight fires by removing heat and oxygen. The small and fine water mist droplets have a larger surface area, allowing for better heat absorption. This enables the mist to suppress a larger fire area without using excessive water. In addition to being safe for people and the environment, the water mist system also allows for easy cleanup after activation, presents a cost-effective solution, and installation during retrofit works in old hangars."

The FIREKILL™ system, which has undergone full-scale fire testing, is increasingly being used in large commercial and fighter jet hangars worldwide.