



Pictured left to right: Jim Schwander/Perimeter Solutions, Seth Newlin/OSHKOSH, Mark Siem/Perimeter Solutions, Mitch Hubert/Perimeter Solutions, Brian Honey/M&L SUPPLY Fire & Safety, Fire Chief Mark Smith/Billy Bishop Toronto City Airport, Angela Puddephatt/M&L SUPPLY Fire & Safety, Mark Prendergast/M&L SUPPLY Fire & Safety.

CASE STUDY: AVIATION FIRE SAFETY

Transitioning Airport Firefighting to Fluorine-Free Foam

Challenge

Become Canada's first airport to implement fluorine-free ARFF firefighting foam

Solution:

Perimeter Solutions' SOLBERG® RE-HEALING® RF3 3% Class B Foam Concentrate

Fire Safety System

In July of 2019, Civil Aviation of Transport Canada issued an exemption from a section of the Aircraft Fire Fighting at Airport and Aerodrome Standards that would allow, under certain conditions, the transition to and use of fluorine-free Aircraft Rescue Fire Fighting (ARFF) fire suppressant technology on firetrucks at every Canadian airport.

To be eligible, the Billy Bishop Toronto City Airport had to demonstrate to authorities:

1. Foams had International Civil Aviation Organization (ICAO) Level B or C certification depending on the type of aircraft in use at the airport, along with equipment and staffing at the airport.
2. The new foam technology was demonstrably improved from an environmental standpoint and contained no intentionally added PFAS chemicals.
3. The actual foam product to be used needed had been tested in existing equipment systems to ensure proper proportioning of foam concentrate in the water at each discharge port of the ARFF truck – and every piece of equipment to transition had been live tested.

As a leader in the development of fluorine-free foam technology globally, with experience in converting European airports to the technology, at the time, Perimeter Solutions was the only company offering ICAO Level C certified fluorine-free foam concentrates with our SOLBERG® RE-HEALING® product

Firefighting Foam Selection

SOLBERG RE-HEALING foam concentrates from Perimeter Solutions are innovative fluorosurfactant and fluoropolymer-free firefighting foams replacing traditional AFFF and AR-AFFF foams. They can be used to effectively extinguish Class B fuels, avoiding issues of persistence, bioaccumulation or toxic breakdown. SOLBERG RE-HEALING foam concentrates can be used in fresh, salt or brackish water and possess excellent burn back resistance due to excellent flow and rapid sealing characteristics.

SOLBERG RE-HEALING foam concentrates are available in 3%, 6% and 3x6 ATC formulations. The SOLBERG RE-HEALING foam concentrates are intended for use on Class B hydrocarbon and polar solvent fuel fires. They have been tested to and meet the fire performance test criteria of UL Standard 162, UL of Canada (ULC) Standard S564, FM Approval Standard 5130 and European Standard EN 1568 Part 3 and Part 4.



Technical personnel reviewing test results with airport officials.

Compatibility with Equipment is Key Issue

Understanding that SOLBERG RE-HEALING RF-3 is a non-Newtonian material, an initial concern was that the Billy Bishop Airport's two Oshkosh Striker 1500 firetrucks were accustomed to deploying only low viscosity foams.

Perimeter Solutions technical personnel went onsite to Billy Bishop Airport and worked with ARFF truck manufacturer OSHKOSH, airport personnel and Transport Canada regulators to test SOLBERG RE-HEALING RF-3 in existing equipment. The OSHKOSH team made minor modifications – primarily poppet valves – to truck equipment onsite to ensure that a minimum 3% proportioning ratio was maintained in the truck's discharge ports at all times.

Conclusion

At the end of this process, Transport Canada approved the use of SOLBERG RE-HEALING RF-3 in place of fluorinated foam. The transition was completed successfully at minimum additional cost to the Airport in October 2019 – less than four months after the regulatory change. Today, Billy Bishop is protecting the environment and worker safety ahead of future regulatory requirements and associated transition and disposal costs.

If you have any further questions on transitioning to fluorine-free firefighting foam in aviation environments, contact your Perimeter Solutions representative.



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Solutions That Save.

FOR MORE INFORMATION

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