European Union Aviation Safety Agency

FAQ n.142304

FAQs:

Rescue and Firefighting, Aerodromes (ADR), Regulations

Question:

What are the differences between AFFFs (Aqueous Film-Forming Foams) and the F3s (Fluorine-Free Foams)?

Answer:

The main differences between the Aqueous Film-Forming Foams (AFFFs) and Fluorine-Free Foams (F3s) are chemical composition, firefighting performances and operational application methods.

AFFFs (Aqueous Film-Forming Foams) contain PFAS, that are responsible for these foams' ability to form an aqueous film which helps to quickly suppress fires and provides higher resistance to re-ignition, even when foam has been degraded due to time or weather conditions.

F3s (Fluorine-Free Foams) have in common to be designed to be free of intentional fluorinated chemicals. Without fluor surfactants and film forming abilities, **their firefighting efficiency mainly relies on the quality of the foam blanket applied in operation**.

Accordingly, level of performance highly depends on the initial **quality of the foam produced by nozzle**, the **quality of the foam blanket created by firefighters** and **maintaining this quality despite degradation by time, physical or weather conditions**.

F3 Foam concentrate also presents various compositions, e.g. various physical properties, such as a different viscosity, that may impact quality of foam produced with firefighting equipment.

As a result, whatever the foam fire performance level, the compatibility with firefighting equipment and the training and operational tactics are more important criteria when using F3 than AFFF.

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