European Union Aviation Safety Agency

FAQ n.142314

FAQs:

Rescue and Firefighting, Aerodromes (ADR), Regulations

Question:

Do airports need to change their firefighting vehicles or systems to use Fluorine Free Foam?

Answer:

No, not necessarily. However, to ensure effectiveness of the new foam, the following aspects should be considered:

1. the compatibility of specifications of the intended foam concentrate with each firefighting vehicle and its firefighting systems;
2. sufficient cleaning of firefighting systems to avoid chemical interactions between previous foam (AFFF or F3) and new fluorine free foam.

Compatibility of F3s with vehicles depends on both the specifications of the vehicles and the on-board equipment, such as the foam proportioning system and nozzles, as well as the physical properties of the selected fluorine-free foam (e.g., viscosity or expansion rates), which could impact its performance with existing firefighting systems.

Depending on the chosen foam concentrate, **airports may need to adjust or replace foam proportioning systems or nozzles to ensure compatibility**. In some cases, if adjustments or replacements are not feasible, it may be necessary to **consider changing firefighting vehicles** or, if possible, selecting a foam product with more suitable physical properties.

Therefore, it is recommended (including by vehicles manufacturers) to check the compatibility of the vehicles with the intended product:

- Prior to the order and delivery of the product, through a verification of the declared specifications and consultation with the manufacturers (of the vehicle and of the foam). At this point, results obtained previously on similar vehicles can be useful and valuable;
- Then, before F3 is officially put into service, (in-site) measurements and tests, to ensure that foam production by the airport's RFF vehicle is of an acceptable and expected standard considering proportioning system, foam quality and jet range (see ICAO Airport Service Manual "§ 8.1.6 "Foam performance acceptance test").

Considering sufficient cleaning of vehicle and firefighting systems, as it was usually recommended for any change of AFFF, a simple water rinse of the entire system (from tank to external equipment) may be considered as sufficient to prevent chemical interactions between new F3 and previous used foam.

However, it should also be noted that additional cleaning or vehicle replacement may be necessary to meet environmental requirements, due to the potential residual contamination of firefighting equipment with PFAS.

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