Guidance Note

Fire Industry Association

Leading Excellence in Fire Since 1916

FIA Guidance: PFAS in Firefighting foams Restrictions Update

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1. Current situation

In the UK there is currently no legal restriction on the supply or refilling of current fluorotelomer based (C-6/PFHxA) AFFF in fire extinguishing applications including fire extinguishers.

By way of background since at least the last ten years, all AFFF has been based on fluorotelomer chemistry which does not contain PFOS/PFOA (C-8) or PFHxS. Prior to that date AFFF was likely to contain PFOS/PFOA. PFHxS was not used in firefighting foams but is a breakdown product of PFOS.

PFOS/PFOA/PFHxS are chemicals covered by UK and EU REACH & POPS (Persistent Organic Pollutants) Restrictions which ban their use at certain concentrations. The concentrations of these chemicals in AFFF used in fire extinguishing applications is above that threshold. PFOS and PFHxS are already banned.

a) The transition period for removal of PFOA to below acceptable unintentional trace limits (UTC) ended on 4th July 2025. Any extinguishers or fixed foam systems containing PFOA above these thresholds must be removed, disposed of safely and replaced with alternatives that do not exceed this legislated threshold."

b) Care must be taken when refilling extinguishers or fixed systems which have contained PFOS/PFOA/PFHxS with either C6-fluorotelomer foam or Fluorine Free Foam (F3) alternatives. Equipment needs to be cleaned out prior to refilling to ensure residual levels of PFOS/PFOA/PFHxS are below the legislated trace limits. If laboratory testing confirms trace amounts of these PFAS chemicals are above the prescribed limits, they will not be permitted for continued use and will need re-cleaning until residues are below prohibition levels

Refilling extinguishers or fixed systems which have previously contained PFOS/PFOA/PFHxS foams, with fluorotelomer foam will not make them exempt from the PFOS/PFOA/PFHxS bans.

This is because trace amounts of these chemicals may remain above the prescribed limits if the old foam systems were not properly cleaned prior to refilling with the fluorotelomer.

2. Definitions/abbreviations

AHJ
Authority having Jurisdiction.
EIF
Entry into force.
Gen-X – or HexaFluoroPropylene Oxide (HFPO)
a C6 short-chain alternative non-stick coating to C8-PFAS. This is not used, nor should be found in firefighting foams.
mg/kg or mg/Litre –
equates to 1 part per million (ppm).
µg/kg or µg/L
equates to 1 part per billion (ppb).
ng/kg or ng/L

equates to 1 part per trillion (ppt).

PFAS

Per & poly fluorinated substances - the generic term for all fluorinated compounds including fluorotelomer foams.

PFOS

Perfluorooctane sulfonate.

PFOA

Perfluorooctanoic acid.

PFHxA

Perfluorohexanoic acid.

PFHxS

Perfluorohexanesulphonic acid.

POPs

Persistent organic pollutants - POPs are regulated worldwide by the Stockholm Convention and the Aarhus Protocol.

PFAS-free or Fluorine Free Foams (F3)

Foams without any intended PFAS added.

Note: These foams may still contain traces of PFAS from the manufacturing process and water used, but the total PFAS contamination level is required to be below 1ppm level (1mg/kg) in EU, although lower limits of 1ppb (1µg/kg) total PFAS apply for F3s in USA by US Department of Defence's New F3 MilSpec (Jan.2023). US EPA has also set extremely low drinking water PFAS restriction levels of 4ppt (4ng/kg) for PFOS & PFOA and 10ppt for PFHxS, PFNA and Gen-X.

TOP-Assay or TOPA

Total Oxidisable Precursor Assay, a laboratory analysis method to establish the contamination level of all PFAS in samples of firefighting foam concentrate, foam solution or system rinsing water, to verify unintentional trace contamination (UTC) levels. Only a qualified, registered laboratory should be used for such testing.

TOF

Total Organic Fluorine, a laboratory analysis method to establish the contamination level of all PFAS in samples of firefighting foam concentrate, foam solution or system rinsing water, to verify unintentional trace contamination (UTC) levels. Only a qualified, registered laboratory should be used for such testing.

UTC

Unintentional Trace Contamination (often referring to PFAS).

3. Going forward

3.1 EU

3.1.1. PFHxA Restrictions

ECHA, the EU body for REACH restrictions, have published 2 REACH restrictions that would ban PFAS in firefighting foams in the EU.

The first of these which covers applications of PFHxA, (EU) 2024/2462 and was published in the Official Journal of the EU on 19 September 2024. This is the date of entry into force.

Although PFHxA (the main C6 breakdown chemical) would effectively cover all current firefighting foams the restriction limits itself to amounts equal to or above 25ppb for PFHxA, its salts or 1,000ppb for sum of PFHxA-related substances. for 3 specific dispersive PFHxA applications involving firefighting foams (which EU decided should not be delayed):

- from 10 April 2026 C6 foams used for training and testing are banned from use above these levels (except functional testing where all releases are contained and disposed of safely according to regulatory requirements)
- from 10 April 2026 C6 foams used by public Fire and Rescue Services (FRS) (except COMAH sites i.e. industrial chemical sites under directive 2012/18/EU)
- from 10 October 2029 C6 foams used for Civil aviation (including in civilian airports).

All other C6 firefighting foam applications (including portable extinguishers) are restricted with specific transition periods under the PFAS restriction in Firefighting Foam legislation (Regulation 2025/1988) issued on 2nd October 2025.

COMMISSION REGULATION (EU) 2025/1988 of 2 October 2025 amending Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council as regards per- and polyfluoroalkyl substances in firefighting foams

The restriction limits the amount of PFAS in firefighting foams as follows:

PFAS shall not be placed on the market or used as of 23 October 2030 in firefighting foams in a concentration equal to or greater than 1 mg/L for the sum of all PFAS

Specific portable extinguisher extended use derogations cover:

• New (extinguishers placed on market for the first time)

o AFFF/FFFP Fire extinguishers - 23 October 2026

o Alcohol resistant foam (AR-AFFF/AR-FFFP) in fire extinguishers - 23 October 2027

• Existing extinguisher stocks (already in service)

o All foam fire extinguishers - 30 December 2030

Specific extended use derogations to 23 October 2035 for fixed foam system applications apply to:

- Seveso III (COMAH) sites
- Offshore oil and gas installations
- Military vessels
- Civilian ships (with PFAS foam systems on board before 23 October 2025)

The regulation also set requirements on users of PFAS containing foams from 23 October 2026

- only used on flammable liquid fires (Class B)
- reduce emissions to the environmental compartments and direct and indirect human exposure to firefighting foams to as low a level as is technically and practically possible; - bunding etc.
- **Ensure the separate collection and safe disposal of not-utilised firefighting foam stock, PFAS waste, discharged foam, firewater runoff and wastewater (including from system cleaning)**"
- establish a "PFAS-containing firefighting foams management plan"
- The management plan shall be reviewed annually and be kept available for at least 15 years for inspection, on request, by competent authorities

The restriction also has labelling requirements from 23 October 2026 – stocks of unused foams and waste- must be labelled

"WARNING: Contains per- and polyfluoroalkyl substances (PFAS) with a concentration equal to or greater than 1 mg/L for the sum of all PFAS".

The restriction also makes allowances for cleaning

By way of derogation from paragraph 1, the concentration of PFAS in fluorine-free firefighting foams originating from the equipment which has undergone cleaning in accordance with best available techniques, excluding portable fire extinguishers, shall not exceed 50 mg/L for the sum of all PFAS.

It doesn't impact the England, Scotland or Wales other than for export purposes and possibly influencing the DEFRA/HSE consultation process for the UK restriction (see 3.2), it will be implemented in Northern Ireland.

b) Existing restrictions

3.1.2. REACH Extension of PFOA use until 3 December 2025

Under EC REACH regulation 1907/2006 the exemption for continued use of PFOA in firefighting foams was extended from 4th July 2025 to 3rd December 2025 in EU but remained implemented from 4th July 2025 in UK under Environment Agency regulations." The Commission proposes to extend the specific exemption from July until 3 December 2025, the latest possible date under the current specific exemption of 5 years in the Stockholm Convention.

3.1.3. Unintentional trace limit for PFOA in firefighting foam and foam systems

EU regulation 2025/1399 issued 5 May 2025 amends regulation 2019/1021 to require unintended trace contaminants (UTC) limits of 25ppb PFOA, its salts or 1ppm (1mg/kg) is set for any individual PFOA-related compound or combination of PFOA-related compounds in substances, articles or

mixtures, which includes all firefighting foams including PFAS-free alternatives. It also recognised that PFOA-related compounds may be present in higher concentrations as UTCs in firefighting foams already installed in foam systems. Accordingly, it confirmed a 10ppm limit for any PFOA -related compounds found in fluorine free firefighting foams (F3s) installed after cleaning of the firefighting foam system that replaces foams containing PFAS. This includes concentrates and foam solutions used to fight fires."It also recognized that PFOA-related compounds may be present in higher concentrations as UTCs in firefighting foams already installed in foam systems. Accordingly, it confirms a 10ppm limit should be set for any PFOA -related compounds found in fluorine free firefighting foams (F3s) installed after cleaning of the firefighting foam system that replaces foams containing PFAS.

3.2 Northern Ireland

Under Annex 2 of the Windsor Framework, Northern Ireland continues to follow EU chemicals legislation including EU REACH and POPs legislation. As a result, Northern Ireland is subject to any EU restrictions. The information in 3.1 applies to Northen Ireland

3.3 England, Scotland, Wales

3.2.1. New restrictions

The proposed restriction follows the extended transition periods in the 2025/1988 EU PFAS restriction in firefighting foams regulation, to coincide implementation dates (based on UK's implementation lags a few years behind EU). Proposed restriction concentration for total PFAS set above1ppm (mg/L) in the foam concentrate, effective from entry into force includes:

The proposed restriction is as follows

The restriction for placing on the market should apply where the concentration of total PFAS is greater than 1 mg/L in the foam concentrate

It is also proposing a cleaning limit of 50 mg/l.

Proposed transitional periods are:

Table 1: Transitional periods for placing on the market.

	Sector/use	Transitional period from the entry into force
1	Portable fire-extinguishers (defined by BS EN3-7, BS EN-1866 and BS EN-16856)	6 months
2	Sectors with specific transition periods for use defined in Table 2	Until the end of the transitional period for uses defined in Table 2
3	All other uses[#]	5 years

[#] There may be other uses that are not covered by the sector specific transition periods in Table 2. For such cases, the Agency suggests a 5 year transition period for placing on the market which is in line with the requirements for most sectors. Other uses could, for example, include chemical manufacturing facilities not classed as COMAH sites.

Table 2: Transitional periods for use

	Sector/use	Transitional period from the entry into force
1	Portable fire extinguishers (defined by BS EN3-7, BS EN-1866 and BS EN-16856)	5 years
2	COMAH sites; except for those already covered by the arrangements for aviation (see point 6)	10 years
3	Training and testing[#]; except testing of firefighting systems for their function.	18 months

	Sector/use	Transitional period from the entry into force
4	Fire and rescue services; except for those also responsible for attending industrial fires for establishments covered by COMAH, where the 10 year transition period will apply for **use at these establishments only** (see point 2).	18 months
5	On board civilian boats	5 years
6	Civilian aviation sites	5 years
7	Defence*; except for military vessels where a 10 year transition period will be applicable	5 years
8	Offshore oil and gas installations	10 years
9	All other uses$	5 years

#A separate transition period is considered appropriate for training with FFF compared to their use during live incidents. Given that most training takes place under controlled conditions and measures are already in place to use PFAS-free foams for such purposes, a relatively short transition period is considered appropriate. Likewise for testing (e.g., testing foams to establish suitability), a shorter transition period is considered appropriate. An exception should be made for the testing of fixed firefighting systems to ensure they can continue to comply with required safety standards until the end of the sector-specific transition periods.

*Defence is considered to include sites on land either owned by the Ministry of Defence (MoD), or where the MoD has rights to the land or assets owned by or operated on behalf of the MoD. An exception should be made for use on military vessels, where a longer transition period is considered appropriate to account for specific defence requirements and to allow for any refitting.

$There may be other uses that are not covered by the sector specific transition periods in points 1 to 8. For such cases, the Agency suggests a 5 year transition period which is in line with the requirements for most sectors. Other uses could, for example, include chemical manufacturing facilities not classed as COMAH sites.

A 50ppm (mg/L) total PFAS limit for system clean-out is being considered to coincide with EU regulation. Minimising PFAS releases to the environment, clear labelling where PFAS exceeds 1ppm and maintenance of a PFAS management plan are additional proposed conditions."

3.2.2. Existing restrictions

UK Environment Agency in March 2022 issued Storage and disposal of Class B firefighting foams documentation which confirmed restriction concentrations for PFOA, or its salts at 25ppb or all PFOA -related substances at1ppm. Where these levels are exceeded:

- The fire-fighting foam shall not be used for training.
- The fire-fighting foam shall not be used for testing unless all releases are contained.
- As from 1 January 2023, the use of the fire-fighting foam shall only be allowed in sites where all releases can be contained.
- **As from 4 July 2025, all uses are prohibited**."

4. Impact of Restrictions

Note: any total PFAS ban would impact:

- Any waterbased extinguishers that contain PFAS e.g., AFFF, wet chemical and some water additives.
- Fixed foam systems
- Fire Service use – F&RS, Military and airport and Petrochemical
- Foam enhanced Waterbased fixed systems – sprinklers, watermist

As with previous such bans, we would expect there to be considerable supply-side issues such as manufacturers clear stock, move to new fluorine free product, etc.

Many manufacturers/suppliers, but not all, have already moved away from fluorinated foam production, some are continuing supply of C6-PFAS foams throughout the transition periods, hence refill and purchase may become more complicated and riskier for the operational sustainability of existing foam systems in case of activation. Reserve PFAS-foam stocks are therefore recommended where F3 transition may be delayed.

There will also be increased demand for disposal of extinguishers and PFAS-foam concentrate containing these restricted chemicals.

This would likely have a significant impact on the market and end users, and their suppliers should

be mindful of this.

5. FIA Position

We (FIA) are recommending people start to plan for a move to fluorine free agents particularly where restriction extensions are short, but for the longer 10-year exemptions there is more time. It should be noted that there is no in force legal requirement yet in UK (at time of writing October 2025).

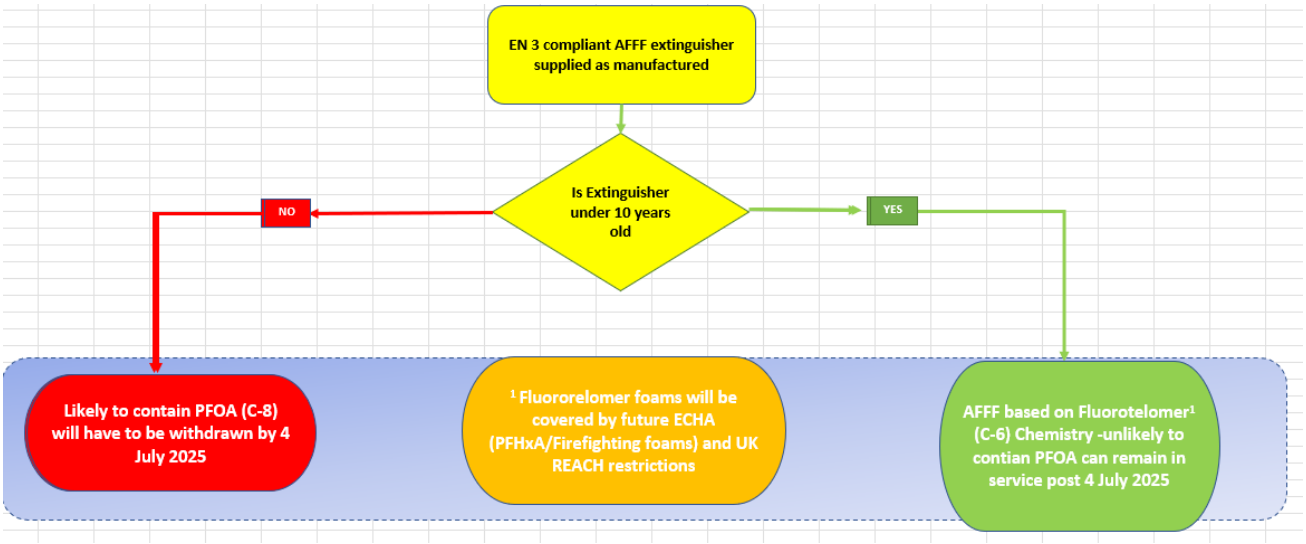
With the EU restriction published the timelines are now clear for Europe, with all the derogations it is end of 2035.

If transitioning, please check equivalent fire testing approvals and application rates for the fuels being stored/used in bulk, to ensure your fire safety is not being unintentionally compromised.

FIA is also discussing the disposal of PFAS foams with the UK waste companies.

When further regulatory dates are confirmed, FIA will issue more precise guidance.

Annex A Summary PFOA in portable fire extinguishers



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