

New firefighting foam compliance guide



Toxic foam firefighting systems are facing a shake-up. Environmental and public health concerns over toxic foam firefighting systems have resulted in an imminent ban or restrictions relating to the use of such foams in some Australian states. Major hazard facilities such as airports, mines, ports and petrochemical sites must comply with any new rules.

What is happening?

- Pressure is growing on industrial sites in Australia to phase out or minimise the use of fluorinated firefighting foams containing the compounds perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). The latter, in particular, has been linked to health and environmental risks, including cancer and contamination of waterways and groundwater.
- In Australia, a water-contamination scandal involving PFOS and PFOAs at the Oakey Army and Aviation Centre in Queensland has seen hundreds of residents begin a class action against the Defence Department amid claims they may have consumed toxic chemicals through bore water. The case has triggered a State Government policy requiring stocks of PFOA and PFOS to be disposed of by July 2019.

- Other incidents around Australia have also raised safety concerns. In February 2018, South Australia became the first state to ban the use of all fluorinated firefighting foams amid fears of waterways pollution.

What are the implications?

Overhauling firefighting foam systems may require considerable time and expense for major hazard facilities because existing foams have to be safely removed and destroyed, while any new foams should undergo robust testing to demonstrate they are compatible with associated systems and equipment.

There are also concerns that alternative fluorine-free firefighting foams may not be suitable for extinguishing some major fires – for example, on petrochemical sites – because of a reduced capacity to seal vapour on highly volatile fuels.

What do you need to do?

Affected facilities managers are being urged to seek the assistance of experienced fire-protection services to ensure their sites comply with new regulations. Actions should include removing existing foams stocks from service and subjecting any new foams to a detailed review with the assistance of fire system designers and foam suppliers.

Compliance Checklist

- the key to protecting people and property

#1 Seek advice on appropriate foams

Firefighting foams fit into two broad categories – aqueous film-forming foams (AFFFs) and protein foams which contain fluorinated surfactants; and fluorine-free foams. Older C8 type foams have largely been phased out in Australia, while more modern C6 foams are usually subject to strict management and containment rules because of the risk of toxins entering waterways. South Australia has banned all fluorinated foams. Fluorine levels in firefighting foams will now require certification by suppliers.

#2 Dispose of any banned foams

Under the new policies in Queensland and South Australia, major hazard facilities must dispose of any banned firefighting foams within the prescribed deadlines (July 2019 in Queensland and 2020 in South Australia). Such disposals require considerable planning and expertise, with foams having to be sent for high-temperature incineration at an approved facility.

#3 Review all firefighting systems

Firefighting foams should not be changed without completing a detailed review of the design, performance and operation of a site's firefighting system as a whole. Any appraisals should recognise that replacement

foams may not be compatible with existing fire system infrastructure or the quantity of foam required may be different.

Do your products and systems pass the test?

Firefighting foam is typically applied in two ways:

- non-aspirated – through water nozzles, sprinklers or deluge nozzles
- aspirated – including through foam-making devices such as branchpipes, top pourers, foam cannons, foam sprinklers or high expansion generators.

It is important, to note, however, that fluorine-free foams have historically not been suitable for use in portable fire extinguishers or non-aspirated spray that is used to protect large machines. Foams should pass performance and characteristic testing to ensure they are compatible with system designs for fixed and portable firefighting equipment.

In all phases of firefighting foam disposal, system reviews and the rollout of new systems and products, it is essential to seek the advice of firefighting experts.

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