

Firefighting foam compliance guide



Toxic foam firefighting systems are facing a shake-up that could affect the profitability of businesses. 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, or face the risk of fines or legal action that could hurt their bottom line.

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 saw hundreds of residents begin a class action against the Defence Department amid claims they may have consumed toxic chemicals through bore water. The case 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 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.

How this impacts your business?

There are clear steps businesses can take in response to these changes.

Protecting workers

The immediate goal must be to safeguard workers against the potential hazards of these toxic foams, which have been linked to various forms of cancer, thyroid disease and other serious health issues.

Affected facility managers are being urged to seek the assistance of experienced fire-protection services to ensure their sites comply with any new regulations. The ethical risks associated with failing to transition to safer fire-mitigation products are significant. The offending foams can present health risks to workers, and already in the United States and Australia lawsuits are being lodged against entities that have allegedly failed to address the threats posed by toxic foams.

Reviewing all stock

Actions should also include removing existing foams stocks from service and subjecting any new foam to a detailed review with the assistance of fire-system designers and foam suppliers.

Safeguarding the bottom line – In line with risk compliance and mitigation efforts that can protect people and profitability, sites should follow code-of-practice rules related to Australian Standard AS 1851 requiring annual testing of foam stock to ensure that the fire-suppression foams are suitable for their specified application. Periodic testing of foam systems is also recommended to ensure they function properly in an emergency.

Again, fire-fighting experts can assist sites with such testing and compliance initiatives and ensure that the business is well placed for a safe and financially successful future while minimising or eliminating long-term compliance costs.

Doing it right the first time can help protect employees while also avoiding future possible fines and potential costs associated with downtime.

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 major hazard facilities must dispose of any banned firefighting foams. 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.

Delta Fire specialises in the fire protection of high-risk environments such as airports and industrial sites. Partnering with some of the world's premier fire safety and firefighting equipment manufacturers, the company's client list includes Virgin Australia, Qantas, BHP Billiton, Viva Energy, Caltex Australia, BP Petroleum, Neumann Petroleum and Royal Vopak.

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