



**OILTECHNICS**  
FIRE FIGHTING  
PRODUCTS



# FIRE FIGHTING FOAMS & FOAM TESTING



# *Fire Fighting Foams & Foam Testing*

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### WHO WE ARE

Oil Technics (Fire Fighting Products) Ltd. specialises in the supply and manufacture of fire fighting foam concentrates and the laboratory testing of produced foam and foam concentrates. Based in Aberdeenshire, Scotland, our purpose built foam factory and testing laboratory, graduate staff, ISO 9001:2008 and ISO 14001:2004 accreditation and over 30 years experience in foam manufacturing and foam testing enables us to offer world class products and services.

### WHAT WE OFFER

We deliver a unique and valued service for our customers across a broad range of sectors including the Oil & Gas industry, Airports, Fire Services, Chemical Plants and Refineries.

Our dedicated fire fighting foam website offers our customers extensive information and the opportunity to order a wide range of products online, including:

- > **Foam Concentrates**
- > **Foam Tests**
- > **Free sample bottles**
- > **Foam Test Kits & Equipment**
- > **Training Courses**
- > **24 hour telephone advice and emergency support**



### OUR PRODUCTS & SERVICES

We are a 30 year old company manufacturing and supplying fire fighting foam concentrates from our new facilities in Aberdeenshire.

We offer a full range of C6 compliant foams, foam testing services, technical support and training courses.

Our 24 hour out-of-hours emergency service can supply foam ex-stock throughout Scotland: tel. 01561 361 515.

Modern, high quality foam concentrates are very stable and are excellent candidates for long term storage, with minimal or no effects on performance.

Most reputable foam concentrate manufacturers offer at least a 10 year life for products correctly stored and in original containers with the manufacturer's seal still intact (unopened).

## THE PURPOSE OF TESTING FOAM CONCENTRATES

While the storage capability of high quality foams is excellent, the performance of a Foam Concentrate can be compromised by the following factors:

- > Dilution
- > Contamination
- > Extremes of Temperature

For these reasons International Standards:

- > NFPA 11
- > BS 5306
- > UKOOA/HSE

make the following recommendation:

**"At least annually, an inspection shall be made of foam concentrates... for evidence of excessive sludging or deterioration.**

**Samples of concentrates shall be sent to the manufacturer or qualified laboratory for quality condition testing."**

NFPA 11, 2010 Edition, 12.6.1 and 12.6.2

All test reports are written in plain English. We will aim to send your report to you by post, email or fax within 3 working days of receipt of your sample.

For our UK North Sea customers, in the event of an emergency we offer heliport collection and same day testing.

### FOAM CONCENTRATE TEST REPORT

The purpose of a Foam Test Report is to evaluate if the sample tested is in satisfactory condition and, most importantly, to enable the customer or laboratory to confirm the foam is within the manufacturer's specification.

Each Foam Concentrate Test Report offers analysis of 10 key features:

- > Appearance      > Surface Tension      > pH      > Viscosity
- > Specific Gravity      > Expansion Rates      > Burnback Performance (Protein)
- > Freeze point      > 25% Drainage      > Fire Extinguishment Properties (Synthetic)



### PRODUCED FOAM TEST REPORT

The purpose of a Produced Foam Test Report is to determine the suitability and accuracy of a foam system's proportioning and induction equipment.

Each Produced Foam Test Report shows the calculated % induction obtained from the sample provided. This result is compared against the two Internationally recognised Foam Standards - **NFPA 11** and **BS 5306**.

Comparison of NFPA 11 and BS 5306 for Produced Foam Testing		
	NFPA 11	BS 5306
1%	1.0 - 1.3%	1.0 - 1.25%
3%	3.0 - 3.9%	3.0 - 4.0%
6%	6.0 - 7.0%	5.0 - 6.0%

**SAMPLING FOAM CONCENTRATE FROM A TANK**

If a foam concentrate is contaminated or degraded, samples taken from the top and bottom of a storage tank are likely to have different physical properties. For this reason, we recommend concentrates should not be circulated prior to sampling.



Normally, two samples per storage tank are taken:

- > One sample from the bottom (1 Litre).
- > One sample from the top (1 Litre).

If you have access to a tank sampling jar with removable bung, we recommend taking an additional 1 Litre sample from the middle of the tank.

**The contents of a tank should not be circulated where dilution or contamination of the foam concentrate is suspected to have occurred.** We also recommend that the tank is labelled with "Awaiting Foam Test Results" and the date that the sample was taken.

Once the samples have been taken, the tank should not be circulated until the samples have been tested and the results obtained. However, if it is only possible to take one sample, then circulate the tank to obtain a 'composite sample' prior to taking a 1 Litre sample.

**TAKING A FOAM CONCENTRATE SAMPLE FROM THE BOTTOM OF A TANK**

When taking a sample from the bottom of a foam storage tank, it is important that any sludge, sediment, rust, scale etc is removed before collection of the sample. To do this, draw off at least 5-10L of product before taking a sample.

**SAMPLING FOAM CONCENTRATE FROM A DRUM**

- > Take a 1 Litre sample from the top of the drum.
- > Vigorously shake the drum and take an additional 1 Litre sample.

## TAKING A PRODUCED FOAM SAMPLE

Provide at least:

- > 1 Litre of Foam Concentrate
- > 1 Litre Of Induction Water
- > 0.5 Litre of Produced Foam

Produced Foam samples should be taken from as close as possible to the point where the foam reaches the designated discharge area.



Before taking a sample, activate the foam system long enough to remove standing columns of water (which otherwise would contribute to a diluted produced foam sample), and sample when the system is in equilibrium.

### Collecting samples from nozzles, monitors & overhead sprinklers:

- > Collect sample from the point of impact in the discharge area.

### Collecting samples from Foam Pourers:

- > Insert sample container into the edge of produced foam stream and take a sample.

## LABELLING SAMPLES

Ensure that the labels are completed immediately after filling the sample container. To be able to interpret the test results correctly, all the label information must be accurate.

The container **MUST** be labelled with the following information at a minimum:

- > Company Name
- > Foam Type
- > Brand Name
- > Concentration (ie 1%, 3%, 6%)
- > Date of Sample Collection
- > Sample Source (Tank or Drum Number, Top, Middle or Bottom and any other relevant information)

**If you would like to receive free sample bottles and labels, please contact us.**

Foam Concentrate and Produced Foam testing should be carried out under laboratory conditions to ensure accurate and consistent results. It is not always possible to access a Foam Laboratory and for these occasions we offer "Field Testing Kits" with an easy to use manual.

### PRODUCED FOAM TEST KIT

This Produced Foam Test Kit enables foam induction systems to be easily calibrated. Contains a step by step, easy to follow manual, together with worked examples.

Suitable for testing to the following International Produced Foam Test Standards:

- > NFPA 11 2002 (paragraphs 10.6.2 and 3)
- > BS 5306

Suitable for use with AFFF, Protein and Alcohol Resistant Foams.

#### Contents

- > Produced Foam Testing Manual
- > Digital Refractometer
- > 3 x Sample Bottles
- > 3 x 100ml Cylinders
- > 250ml Beaker
- > 1ml Syringe
- > Carrying Case





## FOAM CONCENTRATE TEST KIT

Suitable for testing AFFF, Protein and Alcohol Resistant Foams. Each Foam Concentrate Kit contains a step by step, easy to follow manual, together with worked examples.

With additional laboratory equipment, can be used to determine:

- > Viscosity - requires a viscometer
- > pH - requires a pH meter
- > Surface tension - requires a surface tension balance

Designed for use with Produced foam to determine:

- > Specific Gravity
- > 25% Drainage
- > Expansion Ratio
- > % Induction

### Note:

Determining Expansion Ratio, % induction and 25% Drainage requires the use of an NFPA 11 Foam Collection Board and an installed foam system.

### Contents

- > Foam Concentrate Testing Manual
- > Produced Foam Testing Manual
- > Mechanical Scales
- > 250ml Beaker
- > 500ml Beaker
- > 3 x 100ml Cylinders
- > Masses for Scales
- > NFPA 11 Foam Collection Cylinder
- > NFPA 11 Foam Collection Stand
- > Conical Measure
- > Thermometer
- > 3 x Sample Bottles
- > Digital Refractometer
- > Stopwatch
- > 1ml Syringe
- > Carrying Case
- > 4 Hydrometers  
(Ranges 1.000 - 1.050, 1.050 - 1.100, 1.100 - 1.150, 1.150 - 1.200)



- > Other Foam Testing Kits are also available, including High Expansion Induction Test Kits. For further information please visit [www.firefightingfoam.com](http://www.firefightingfoam.com)

### FOAM COLLECTION BOARDS

Used for obtaining samples of produced foam and for calculating:

- > 25% Drainage
- > Expansion Ratio

Built to International Foam Standards NFPA 11 or ICAO specifications.

Designed to hold NFPA 11 Foam Collection Cylinder (included in Foam Concentrate Test Kit) or ICAO Foam Collection Cylinder.



### FOAM COLLECTION TRIPODS & STANDS

Enables produced foam samples to be measured correctly. For use in calculating:

- > 25% Drainage
- > Foam expansion

Designed to hold NFPA 11 Foam Collection Cylinder (included in Foam Concentrate Test Kit) or ICAO Foam Collection Cylinder.



### FOAM TESTING PANS

We supply a range of fire pans and branch pipes for the testing of foam concentrates to International standards.

Ideal for fire brigade and airport training purposes.

Trays available to the following specifications:

- > UL 162
- > ICAO Level B & C
- > EN 1568:2008
- > MIL-F 24385-F



### GENERAL INFORMATION

Oil Technics Ltd. provides in-house Training Courses on both Produced Foam and Foam Concentrate testing.

Both of these courses provide extensive technical background and hands-on experience in all aspects of Foam Testing and, on completion, attendees are presented with a Certificate of Competency.

- > Produced Foam Test courses last approximately half a day.
- > Foam Concentrate Test Courses last approximately three days (minimum).

**For further information on pricing and availability, please contact us.**



**AQUEOUS FILM-FORMING FOAMS****1%, 3%, 6% AFFF & 1%, 3%, 6% AFFF-LF**

- > Designed for fast extinguishment of Class B hydrocarbon fuels such as crude oil, gasoline, kerosene and fuel oil
- > Typically first choice for use on offshore oil platforms, petrochemical installations, hydrocarbon storage, production facilities or wherever fast extinguishment is essential
- > Not suitable for use on fuels which are polar solvents and water miscible
- > Suitable for use with either fresh or seawater
- > Fast knockdown
- > Suitable for use in aspirated and non-aspirated systems
- > Minimum storage temperature for AFFFs: 1.7°C (35°F)
- > Minimum storage temperature for AFFF-LFs, tested to UL minimum storage temperature: -17.8°C (0°F)

**Approvals**

- > UL 162
- > EN 1568:2008 part 3
- > ICAO Level B

- > For further information please visit [www.firefightingfoam.com](http://www.firefightingfoam.com)

## ALCOHOL RESISTANT AQUEOUS FILM-FORMING FOAMS

### 1x3%, 3x3%, 3x6% AFFF-AR

- > Designed for fast extinguishment of fires involving both Class B hydrocarbon fuels such as crude oil, gasoline, kerosene and fuel oil and polar solvents and water miscible liquids such as alcohols, ketones, aldehydes and ethers
- > Versatile fire fighting capability reduces the need to stock different foam types
- > Suitable for use with either fresh or seawater
- > Fast knockdown
- > Suitable for use in aspirated and non-aspirated systems



### Approvals

- > UL 162

- > For further information please visit [www.firefightingfoam.com](http://www.firefightingfoam.com)

**FLUOROPROTEIN FOAMS****3%, 6% FP**

- > Designed for the protection of the storage and transport of hydrocarbons, MTBE and blended unleaded fuels
- > Suitable for application using induction equipment such as hand held devices, venturi systems, balance pressure tanks and around the pump proportioners
- > Foam blanket reseals when ruptured and offers excellent sealing action against metal surfaces

**Approvals**

- > UL 162
- > EN 1568:2008 part 3
- > LastFire

- > For further information please visit [www.firefightingfoam.com](http://www.firefightingfoam.com)

## FILM-FORMING FLUOROPROTEIN FOAMS

### 3%, 6% FFFP

- > Designed to offer the same post-fire security as an FP foam
- > FFFPs combine fluorosurfactants to offer similar effective control and extinguishment as an AFFF
- > Provides fast knockdown, excellent burnback and stable long lasting foam blanket
- > For use in the protection of hydrocarbon tanks, process areas, marine terminals and offshore platforms

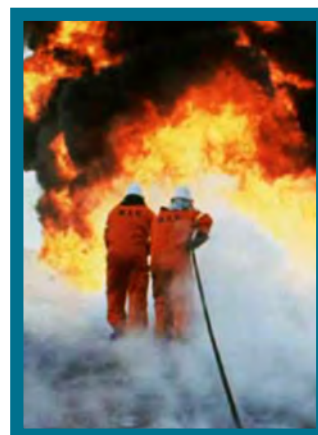
### Approvals

- > **UL 162**
- > **EN 1568:2008 part 3**
- > **ICAO Level B**
- > **NATO Listed**

## ALCOHOL RESISTANT FILM-FORMING FLUOROPROTEIN FOAMS

### 3x3%, 3x6% FFFP-AR

- > Dual application designed to extinguish and secure both hydrocarbon and polar solvent fires
- > Foam blanket rapidly reseals when disturbed by personnel or equipment
- > Non-viscous foam provides easy application and remains fluid at temperatures as low as -17.8°C (0°F)
- > For use by fire brigades, oil storage applications, marine terminals, power stations and offshore platforms
- > Suitable for use with either fresh or seawater
- > Resistant to fuel pick-up



### Approvals

- > **UL 162**
- > **EN 1568:2008 part 3**
- > **ICAO Level B**

> For further information please visit [www.firefightingfoam.com](http://www.firefightingfoam.com)

## HIGH EXPANSION FOAMS

### 2% HI-EX

- > For use at 2% with High Expansion and at 3-5% with Medium Expansion nozzles
- > First choice for flooding of (often inaccessible) areas involving Class A and Class B fires
- > Produced foam offers high drainage, typically above 10 minutes
- > Assists in oxygen depletion, cooling, vapour suppression and fire extinguishment
- > For use by fire brigades, oil storage applications, marine terminals, power stations and offshore platforms
- > Suitable for use with either fresh or seawater
- > Fluorosurfactant free

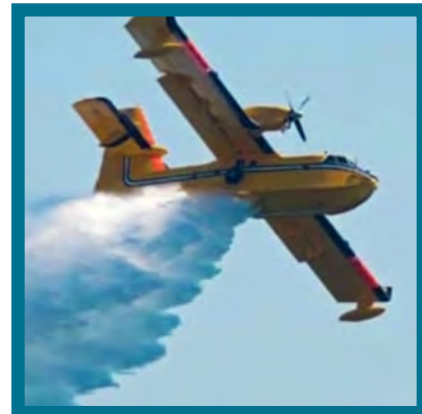
### Approvals

- > **EN 1568:2008 parts 1&2**

## CLASS A FOAMS

### 1% CLASS A

- > Designed for Class A applications ie paper and tyre, building and forestry fires
- > Can be used at inductions as low as 0.1%
- > Highly effective at reducing the surface tension of water to achieve fast penetration and coverage of Class A fires
- > Fluorine free and with good environmental characteristics
- > Can be applied by CAF systems, air aspirated nozzles and conventional nozzles
- > Suitable for use with either fresh or seawater



- > For further information please visit [www.firefightingfoam.com](http://www.firefightingfoam.com)



## FLUORINE FREE FOAMS

### 3% F3

- > Fluorine free foam designed for use on hydrocarbon fires
- > Ideal for civilian and military airports
- > Environmental agency compliant regarding discharge of fluorosurfactants to the environment
- > Fluorosurfactant free

## VAPOUR SUPPRESSION FOAMS

### 6% VapourShield (Acid), 6% VapourShield (Alkali)

- > Designed to provide a stable vapour suppressing foams when used at 6% concentration
- > Available for use on both acid and alkali liquid spills
- > Provides stable, slow draining foam to effectively suppress vapours from accidental chemical spills
- > Suitable for use with either fresh or seawater



## TRAINING FOAMS

### **1%, 3% TF (Synthetic), 3%, 6% TF (Protein)**

- > Fluorine free synthetic and protein based training foam concentrates
- > Designed to mimic the induction properties of fire fighting foam for realistic training scenarios
- > Environmental agency compliant regarding discharge of fluorosurfactants to the environment
- > Not for use in fighting fires

## INDUCTION TESTING LIQUIDS

### **Colour Stream and Conductor Stream Liquids**

- > Avoids the need to discharge foam during system testing
- > A new induction testing system which is not subject to disposal regulations
- > Designed to mimic the induction performance of produced foams for system calibration, without the need for foam discharge
- > Colour Stream uses an environmentally safe vegetable dye to achieve system calibration
- > Conductor Stream uses an environmentally safe liquid to achieve system calibration by conductivity measurement

## ANTIFOAMING AGENT

### **D-Foamer**

- > Designed to defoam liquids and prevent hydrocarbon and foam carry over to surface separators
- > Quick to apply and easy to use
- > Simply dilute and spray over the foam blanket

- > For further information please visit [www.firefightingfoam.com](http://www.firefightingfoam.com)

### NFPA 11

NFPA 11, 2010 Edition makes the following recommendations:

- > “**Different brands** of the same type of concentrate shall not be mixed unless data are provided by the manufacturer ... to prove they are compatible.” (Para. 4.4.1.2)
- > “**Different types** of foam concentrate shall not be mixed for storage.” (Para. 4.4.1.1)

### FOAM COMPATIBILITY

In accordance with NFPA 11, quality foam concentrates of the **same type** from **different suppliers** can be mixed, provided that the supplier presents a Certificate of Compatibility (C of C).

Compatibility testing consists of:

- > Freeze / thaw ageing
- > Performance testing

To be given a C of C, the foam concentrate should show no reportable adverse reactions.

### PLEASE NOTE

- > Quality foam usually refers to those tested and accredited to International Standards such as UL 162 or MIL-F-24385-F.
- > We recommend that Alcohol Resistant (AR) foams are never mixed.



### YOUR GUARANTEE OF PERFORMANCE

Foam concentrates are tested by manufacturers to meet Internationally recognised extinguishment, burnback and proportioning standards.

A quality foam supplier will supply foam concentrates that meet one or more of the following standards:

- > UL 162
- > ICAO Level B & C
- > EN 1568:2008 parts 1-4

These are critical application tests where foam concentrates are tested to the minimum application rate required to extinguish a fire, using sea and potable induction water.

### UL 162 - OFFSHORE PLATFORMS



- > Internationally recognised test method carried out by the UL (Underwriters Laboratory), an independent not-for-profit organisation.
- > UL 162 requires a 50 sq ft heptane fire with a pre burn of 60 seconds to be extinguished at an application Rate of 1.63L/m<sup>2</sup> using a freeze protected foam with potable and sea water.
- > This is a pass or fail test.
- > UL listed products are monitored with samples being sent to UL every 3 months for conformance testing.

### ICAO LEVEL B & C - ONSHORE AIRPORTS & HELIDECKS (UK)



- > The CAA (Civil Aviation Authority) requires a foam concentrate for use in Civilian Airports to be tested using potable water to ICAO Level A, B or C.
- > For UK offshore helidecks, the standard adopted by the CAA is CAP 437 – Standards for Offshore Helicopter Landing Areas, Chapter 5, paragraph 2.6.
- > Unfortunately, CAP 437 requires compliance to at least ICAO Level B using foam tested in sea water and freeze protected - a standard that does not exist!
- > However, CAP 437, paragraph 2.6 does allow the foam manufacturer to advise on performance - Oil Technics recommends UL 162 as the preferred foam concentrate standard for offshore helidecks.
- > ICAO approved products are not conformance monitored after accreditation.

### EN 1568:2008 Parts 1-4



- > A European Standard that critically tests a foam for both extinguishment and burnback in sea and potable water.
- > Not a pass or fail standard - concentrates are allocated grades of performance, ie Grade 1-4 for extinguishing performance and Grades A-D for burnback resistance. 1A is the highest achievable grade.
- > EN 1568 approved products are not conformance monitored after accreditation.





### BIG CHANGES IN FIRE FIGHTING FOAM

To comply with the USA EPA 2010/15 PFOA Stewardship Programme, fluorosurfactant manufacturers worldwide have committed to withdraw from sale any fluorosurfactant with a carbon chain length greater than C6 by 2015. This change will have a significant impact on fire fighting foam manufacturers and users.

**But what does this change mean to you?**



## PFOS, PFOA & FLUROSURFACTANT RESEARCH

Fluorosurfactants are synthetic fluorinated chemicals with varying carbon chain lengths, designed to be highly effective at lowering the surface tension of water. They are used in the manufacture of many different products in many industries, including Fire Fighting Foams. Since the removal of PFOS from Fire Fighting Foams in 2005, a related chemical called Perfluorooctanoic acid (PFOA) has been discovered to be an unintentional by-product of the telomer manufacturing process used in the production of fluorosurfactants.

PFOA is a man-made chemical with a carbon chain length of C7, first synthesised in 1947. It is toxic, bioaccumulative and very persistent and has been found at very low levels in the environment and in the blood of the general population since 1960. PFOA has also been shown to cause adverse effects in laboratory animals.

In October 2003, a fluorosurfactant working group was formed by the Environmental Protection Agency (EPA) in the USA and it concluded that:

- > Fluorosurfactants with an R<sub>f</sub> carbon chain length greater than C6 could potentially degrade and form PFOA and would therefore be classed as being toxic to the environment.
- > There is no pathway for fluorosurfactants with an R<sub>f</sub> chain length of C6 or less to degrade into PFOA (which has an R<sub>f</sub> chain length of C7).

In response to this research and with the aim to reduce the global potential for human exposure to PFOA, in 2005 the EPA convened what has come to be known as the **2010/15 PFOA Stewardship Programme**.

### WHAT IS THE 2010/15 PFOA STEWARDSHIP PROGRAMME?

The 2010/15 PFOA Stewardship Programme asks all manufacturers of long chain fluorotelomers and other long chain fluorinated compounds to voluntarily **stop the production and use of fluorinated compounds with a carbon chain greater than C6 by year end 2015.**

This includes the manufacture of long chain fluorosurfactants previously used in the manufacture of Fire Fighting Foam concentrates.

**European and worldwide manufacturers have now committed to this programme,** meaning fluorinated compounds with carbon chains greater than C6 will soon no longer be available.

### FIRE FIGHTING FOAM & THE MOVE TO C6

The EPA 2010/15 PFOA Stewardship Programme presents a challenge to foam manufacturers.

Fire Fighting Foam concentrates are traditionally manufactured using fluorosurfactants with a carbon chain length between C6 and C12. Manufacturers who have committed to the Programme will stop the production of fluorosurfactants with a carbon chain greater than C6 by year end 2015, meaning these commonly used fluorosurfactants will no longer be available.

Consequently, all fire fighting foam manufacturers will need to:

- > **reformulate** their foam concentrates using C6 fluorosurfactants
- > **retest** these new foam concentrates to meet International standards required by the Offshore Oil & Gas industry, such as UL 162, ICAO Level B and EN 1568:2008 Part 3.

## OUR PROGRESS

Over a year ahead of the date set by the 2010/15 Programme, Oil Technics is proud to offer their customers a **new range of Aberdeen Foam C6 foams**. This gives our customers an early opportunity to make the change to more environmentally friendly foams, potentially giving them an advantage over their competitors.

Our C6 foams have succeeded in meeting the stringent performance requirements of UL 162, which is generally considered to be the most challenging performance standard to obtain.

## HOW WILL THIS CHANGE AFFECT THE END USER?

Ask yourself three things to find out how this change will affect you:

- 1 Is my current foam stock 2010/15 compliant?
- 2 Is my current foam stock UL 162 approved?
- 3 Is my current foam stock compatible with new C6 Fire Fighting Foam?

You may also like to consider the following points:

- > If you blend C6 foam with non-C6 foam, you will lose your C6 compliancy.
- > If you continue to use your existing foam stock, after 2015 you will probably find it is no longer being manufactured and has been replaced by a new C6 foam.

## OUR RANGE

Oil Technics has now developed, tested and passed the following Aberdeen Foam C6-based AFFFs to International foam standards:

Foam Concentrate	Performance Standard
1% AFFF-LF-C6	> UL 162      > ICAO Level B
3% AFFF-LF-C6	> UL 162      > ICAO Level B
6% AFFF-LF-C6	> ICAO Level B
1% AFFF-C6	> UL 162
3% AFFF-C6	> UL 162      > ICAO Level B
6% AFFF-C6	
1 x 1% AFFF-AR-C6	
3 x 3% AFFF-AR-C6	> UL 162

## USEFUL REFERENCES

### C6 FOAM

- > EPA 2010/15 PFOA Stewardship Programme [www.epa.gov/oppt/pfoa](http://www.epa.gov/oppt/pfoa)
- > UL Listings [www.ul.com](http://www.ul.com)

### HELIDECKS & AVIATION

- > Civil Aviation Authority (CAA) [www.caa.co.uk](http://www.caa.co.uk)
- > International Civil Aviation Organization (ICAO) [www.icao.int](http://www.icao.int)

### GENERAL FIRE FIGHTING INFORMATION

- > Foam Testing [www.foamtesting.com](http://www.foamtesting.com)
- > Fire Fighting Foam Coalition [www.ffc.org](http://www.ffc.org)
- > Industrial Fire Hazard Management [www.joiff.com](http://www.joiff.com)
- > Fire Industry Association (FIA) [www.fia.uk.com](http://www.fia.uk.com)
- > Fire Sector Federation (FSF) [www.firesectorfederation.co.uk](http://www.firesectorfederation.co.uk)

## THANK YOU

We would like to thank Fire Manager Pete Dennett and his staff at the Petrofac Fire Training School in Montrose, Scotland, for generously making available to us the use of their fire testing facilities throughout the development of our C6 products.



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