FIRE FIGHTING FOAM TESTING
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www.firefightingfoam.com
**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

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<th>Dilution</th>
<th>Contamination</th>
<th>Extremes of Temperature</th>
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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.

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<th>Each Foam Concentrate Test Report offers analysis of 10 key features:</th>
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<td>&gt; Appearance &gt; Surface Tension &gt; pH &gt; Viscosity</td>
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<tr>
<td>&gt; Specific Gravity &gt; Expansion Rates &gt; Burnback Performance (Protein)</td>
</tr>
<tr>
<td>&gt; Freeze Point &gt; 25% Drainage &gt; Fire Extinguishment Properties (Synthetic)</td>
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**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**.

<table>
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<th>Comparison of NFPA 11 and BS 5306 for Produced Foam Testing</th>
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<tr>
<td></td>
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<tr>
<td>1%</td>
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<tr>
<td>3%</td>
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<tr>
<td>6%</td>
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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.

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.

Take a 1 Litre sample from the top of the drum.
- Vigorously shake the drum and take an additional 1 Litre sample.
Fire Fighting Foam Testing

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.
USEFUL REFERENCES

C6 FOAM
> EPA 2010/15 PFOA Stewardship Programme  www.epa.gov/oppt/pfoa
> UL Listings  www.ul.com

HELIDECKS & AVIATION
> Civil Aviation Authority (CAA)  www.caa.co.uk
> International Civil Aviation Organization (ICAO)  www.icao.int

GENERAL FIRE FIGHTING INFORMATION
> Foam Testing  www.foamtesting.com
> Fire Fighting Foam Coalition  www.fffc.org
> Industrial Fire Hazard Management  www.joiff.com
> Fire Industry Association (FIA)  www.fia.uk.com
> Fire Sector Federation (FSF)  www.firesectorfederation.co.uk

www.foamtesting.com

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