

Fire Safety Guide for Post – Inspection & Testing HS 10.8.3



1 Who needs to read this?

Those responsible for fire safety and management at Post level

2 What is this about?

Providing pragmatic and concise fire safety guidance on inspection and testing of fire safety provisions for those working at Post.

3 What do I need to know and do?

Fire safety provisions are only as good as the inspection and maintenance regime. Please read and understand this guide so you can effectively communicate with external companies to ensure your systems are maintained correctly and operate for you.

4 Are there standards or regulations which apply?

British Standards are recommended as a basic starting point but where this does not apply, or cannot apply, alternative recommendations are made. The general approach is that all FCO buildings overseas will comply with UK codes and regulations. In practice, and particularly where buildings are being leased, this is very difficult to achieve so as general guidance, and where issues arise please refer to these Guides or the FCO Overseas Fire Safety Code for more detail.

5 Where can I find further information?

- HS 10.8 Fire Safety Code
- HS 10.8.1 Fire Safety Guide – General
- HS 10.8.2 Fire Safety Guide – Fire Risk Assessment



It is generally after a fire event that occupants start inspecting and maintaining fire safety provisions, start now before you need to rely on them in an emergency...

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FCO SERVICES

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FIRE SAFETY GUIDE FOR POST - INSPECTION AND TESTING

For the Overseas Estate





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INTRODUCTION

The aim of this guide is to provide fire safety advice more specific to the day to day management of a Post. It is therefore aimed at checks, testing and maintenance rather than on developing plans or procedures. This guide identifies what fire safety provisions may be present and provides recommendations on checking, testing and maintenance. Not all premises will have all the items identified.

The FCO Overseas Fire Safety Code is the overarching document and should be referred to for further detailed information.

It is the responsibility of the Post Fire Safety Manager to ensure that fire safety measures within premises are effective at all times. The Head of Post is responsible for ensuring the Post Fire Safety Manager is in place, is adequately supported and empowered to fulfil their responsibilities. To achieve this, it is important that all fire safety measures are tested and maintained in accordance with this Code.

A maintenance system should be implemented where there is regular monitoring of the fire safety systems, and the equipment is kept fully functional at all the times the building is in use. Where required there should also be alternative procedures identified for those times when systems, equipment and other arrangements are not available or not functioning correctly.

This document is generally aimed at stand-alone premises but where premises are occupied that are part of a larger development, or the FCO is a tenant, the same principles apply albeit any defects in the communal areas will need communicating and co-ordinating with the landlord and possibly other tenants. Please contact the FCO fire advisors if you have any concerns, see below for details.

Responsibilities

A competent person should perform the maintenance and testing of all fire safety measures. A competent person is someone who has skills, knowledge, experience and any other qualities relevant to the task. In many instances, staff employed by Post will be competent to complete these tasks. Where the work is beyond the ability of those employed by post, local contractors with the necessary skill, should be engaged to carry out the work. Where it is not possible to obtain the necessary services locally FCO ESD/FMCU should be contacted.

The Post Fire Safety Manager is responsible for ensuring that records are kept of all tests and inspections by obtaining or using the applicable range of forms. In FM managed posts the Post Fire Safety Manager should check the relevant forms are completed and review the competency of those involved.

Recording

A variety of log book sheets and recording templates are provided in the Appendices of the FCO Fire Safety Code.

Fire Advisory Service

Please refer to the FCO Fire Safety Code in the first instance for any queries but if you have further questions or comments please contact Trenton Fire on +44 (0)1869 366545 or FCOoverseassupport@trentonfire.co.uk



1. FIRE- RESISTING DOORSETS

Fire doors are one of the key components in ensuring a safe building. Containing the fire is key and doors are the main failure point as they wear relatively quickly and involve frequent maintenance.

1.1 Weekly

A weekly check should be undertaken to ensure the following:

- a) All fire resisting doors function correctly and are not missing any cold smoke seals (if fitted);
- b) All door furniture and escape mechanisms i.e. door panic bolts, fail safe locks etc. are functioning correctly;
- c) All notices and signs are correctly positioned; and
- d) All routes are clear of obstruction and fire exits are easily and readily openable.

In larger premises this could be an onerous task and therefore a reasonable approach to these checks may be taken where areas are checked in rotation.



2. FIRE ALARM SYSTEMS

The fire alarm is probably the most important factor in keeping occupants safe. Everyone within the building needs to know if there is a fire at the early stages so they can safely evacuate.

OFFICE AND COMMERCIAL SYSTEMS

2.1 Daily Checks

Check that the fire alarm panel indicates normal operation.

Note: On one day of each week the daily test will be incorporated in the weekly test.



2.2 Weekly

At least one manual call point should be operated progressing through all the call points on a week by week basis.

The latest guidance would recommend that all heads, whether heat or smoke, be tested on an annual basis. This can be an onerous and testing a different head on a weekly basis can reduce this burden. Some systems now incorporate automatic monitoring which may further reduce the inspection and testing burden.

These can vary significantly in the quality and robustness of automatic monitoring but where they are found to adequately test an element of the system the periodic test can be reduced significantly. It is still advisable to have an annual manual test, albeit on a random selection of heads, even where relying on good automatic monitoring. For further information on the acceptability of automatic checks and a more specific fire alarm testing scenario please refer to the FCO Fire Advisors.

Heat and smoke detectors should be visually checked for signs of damage and to ensure the free movement of air around and across the device.

2.3 Monthly

Back-up power supplies (generators or batteries) should be tested on a monthly basis. Generators should be tested in accordance with the manufacturer's instructions but started through a simulated normal power supply failure and run for 1hr. Tanks should be topped up on completion.

Vented batteries should be visually checked and defects rectified.

2.4 Quarterly

Quarterly inspections and tests should be carried out by a competent person and should include:

- a) Records of alarms should be checked and faults rectified.
- b) Batteries and their connections should be examined and tested as specified by the supplier to ensure that they are in good condition.
- c) Where applicable secondary batteries should be examined to ensure that the specific gravity of electrolyte in each cell is correct. Any necessary remedial action should be taken.



- d) Where primary batteries are used they should be tested as stipulated by the supplier or commissioning company.
- e) The alarm functions of the control and indicating equipment should be checked by the operation of a detector. All fault indicators and their circuits should be checked.
- f) A visual inspection should be made to check whether structural or occupancy changes have affected the siting of detectors.
- g) Upon completion of the work a certificate should be given to the responsible person.

2.5 Annually

The annual inspection should be carried out by a competent person.

Each detector and call point should be checked for correct operation where not already tested during previous 12 months as part of weekly checks.

A visual inspection should be made to confirm that all cable fittings and equipment are secure, undamaged and adequately protected.

On completion of the work a certificate of testing should be given to the responsible person.

At least 2% of the heat detectors in the installation should be tested.

2.6 5 Yearly

The responsible person should ensure that every five years the installation is tested in accordance with the testing and inspection requirements of the latest edition of the IEE Wiring Regulations.

DOMESTIC SYSTEMS

2.7 General

Testing of domestic smoke alarms is a simple operation and is outlined below. The Fire Safety Manager should ensure that the following regime is followed:

2.8 At all times:

Battery Type - Ensure that battery is fitted to unit.

Mains Type - Ensure that supply is maintained.

2.9 Monthly

Both Types -

Check sounder operation by activating test button.

Open the unit and clean, carefully, using a vacuum cleaner.

Note: Do not use naked flame, smoke or aerosol as this could contaminate the detector. Proprietary test aerosols are available.

2.10 Annually

Battery Type only - Replace battery. Long life alkaline batteries are recommended.



Note: Do not use rechargeable batteries. These are prone to rapid discharge at the end of their cycle.

2.11 Every Five Years

Mains Type only - Inspect and test supply and using in accordance with Wiring Regulations.



3. EMERGENCY LIGHTING

3.1 General

Because of the possibility of a failure of the normal lighting supply occurring shortly after a period of testing of the emergency lighting system or during the subsequent recharge period, all tests should wherever possible be undertaken at time of minimum risk.

Alternatively suitable temporary arrangements should be made until the batteries have been recharged.

Inspections and tests should be carried out at the following intervals as recommended:

3.2 Daily.

A check should be made every day to ascertain that:

- a) Any fault recorded in the log book has been given urgent attention and the action noted;
- b) Every lamp in a maintained system is lit;
- c) Any fault found is recorded in the logbook and the action taken noted.

3.3 Monthly.

An inspection should be made at monthly intervals in accordance with a systematic schedule.

Tests should be carried out as follows:

- a) Each self-contained luminaire and internally illuminated exit sign should be energised from its battery by simulation of a failure of the supply to the normal lighting for a period sufficient only to ensure that each lamp is illuminated.
- b) The period of simulated failure should not exceed one quarter of the rated duration of the luminaire or sign.
- c) During this period all luminaires and/or signs should be examined visually to ensure that they are functioning correctly.
- d) At the end of this test period the supply to the normal lighting should be restored and any indicator lamp or device checked to ensure that it is showing that the normal supply has been restored.

3.4 Six-monthly.

The monthly inspection should be carried out and the following tests made.

- a) Each 3 hour self-contained luminaire and internally illuminated sign should be energised from its battery for a continuous period of 1 h, by simulation of a failure of the supply to the normal lighting. If the luminaire is rated as having a duration of 1 hour, then the period of simulated failure should be 15 min.
- b) During this period all luminaires and/or signs should be examined visually to ensure that they are functioning correctly.



- c) At the end of this test period the supply and the normal lighting should be restored and any indicator lamp or device checked to ensure that it is showing that the normal supply has been restored.

3.5 Three yearly.

The monthly inspection should be carried out and the following additional tests made.

- a) Each emergency lighting installation should be tested and inspected to ascertain compliance with the current regulations.
- b) Each self-contained luminaire and/or internally illuminated sign should be tested for its full duration.
- c) At the end of the test period the supply to the normal lighting should be restored and any indicator lamp or device checked to ensure that it is showing that normal supply has been restored.



4. WATER SUPPLIES

4.1 General

Water supplies for fire fighting are provided for use by fire service appliances. The supply may consist of:

- a) Fixed hydrants on a water main.
- b) Access to a supply, other than the above, e.g. Swimming pool.
- c) Wet or dry riser mains.

The Fire Safety Manager should ensure that all supplies are maintained in good order.

4.2 Weekly

- a) Check that hydrants are unobstructed.
- b) Check that hydrant indicator plates are present and clearly visible.
- c) Check that access to other supplies is unobstructed.

4.3 Monthly

Carry out all weekly checks and in addition:

- a) Check on the correct operation of all valves and carry out remedial works as necessary.
- b) Check on hydrant couplings, including adaptors fitted to outlets to ensure that they are not damaged and rotate freely.
- c) Test any emergency or standby pumping equipment, kept on site, to ensure correct operation.



5. DIESEL GENERATORS

Generators are rarely tested in reality unless there are significant issues with general power supplies however they can be key in an emergency, particularly in large, multi storey buildings. For this type of building much greater emphasis needs to be placed on generator reliability.

5.1 Monthly

Diesel Generators are to be started up each month (if automatically started the test should be done by losing power to test auto start) they should be allowed to energise the system they are maintaining (lighting, fire alarm etc.) for 60 minutes. At the end of the test period the normal supply should be restored and the charging arrangements for starting battery checked for proper functioning. The fuel, coolant and oil levels topped up as necessary.

5.2 Annually

By a competent person, or in accordance with the manufacturers instructions.



6. WATER BASED EXTINGUISHERS- GAS EXPELLED

Extinguishers should be available to deal with small fires where occupants feel safe in doing so. They should therefore be located by storey exits so a clear escape route is available if needed.

6.1 Monthly

- a) Check that all extinguishers are in their correct locations. See the Fire Equipment Location List.
- b) Lift each extinguisher to ensure that it has not been discharged or emptied.
- c) Check that the nozzle is not obstructed or encrusted.
- d) Check that the plunger is free to move, by turning it between the thumb and fingers (do not depress the plunger).
- e) Check that the extinguisher shows no signs of discharge and has no visible defects such as dents or corrosion.
- f) Check that the hose, if fitted, is in good condition and has no surface cracks.



6.2 Annually

Selected extinguishers:

- a) Test 20 per cent of the extinguishers by discharging them. Do this in rotation so that each is discharged at least once every 5 years. Each extinguisher should provide a good 4m jet for approximately 1 minute.
- b) After discharge, wash the extinguisher out thoroughly with clean water; then drain it, carry out the checks below ('all extinguishers') and recharge it.

All extinguishers:

- a) Check the liquid level against the level marker and top up if necessary with clean water.
- b) Unscrew the gas cartridge; check that the sealing disc is intact and that the plunger works freely. Replace the safety guard.
- c) Weigh the cartridge and compare its weight with that marked on the outside. Replace the cartridge if there has been a greater than 10 per cent weight loss of the contents.
- d) Check that the nozzle (and hose where fitted), strainer cap, cap washer, cap vent holes and internal discharge tube are clean and serviceable.
- e) Replace the whole extinguisher if it is corroded or dented.



7. WATER BASED EXTINGUISHERS – STORED PRESSURE

7.1 Monthly

- a) Check that all extinguishers are in their correct locations.
- b) Check that the pressure indicator of each extinguisher is approximately in the centre of the GREEN sector.
- c) Remove the combined head and tube by unscrewing the hexagon nut in an anti-clockwise direction.
- d) Examine the extinguisher for corrosion; make sure that there is no foreign matter in the extinguisher body.
- e) Refill the extinguisher with the relevant amount of clean water.
- f) Replace the dip tube and head.
- g) Ensure that the hose clip retains the discharge hose.
- h) Tighten the nut in a clockwise direction sufficiently to clamp the 'O' ring seal. Do not over-tighten the nut.
- i) Pressurise the extinguisher by connecting the air supply to the valve. Wait until the indicator needle is in the centre of the GREEN sector and then remove the airline.
- j) Replace the valve cap.

If an airline is not available, the air supply can be provided by a local garage pump, a car foot pump, or a small portable air pump.

7.2 Yearly

Perform the monthly checks, and in addition:

- a) Check that the hose nozzle is clear.
- b) Check the reliability of the gauge by checking the internal pressure at the Schraeder valve connection.
- c) Replace the valve cap.

Selected extinguishers:

Test 25 per cent of the extinguishers each year by encouraging staff to discharge them during training. Do this in rotation, so that each is discharged at least once every 4 years.

7.3 After Use

- a) Check that the nozzle, strainer, vent holes in the cap and (where fitted) the internal discharge tube are clean.
- b) Check that the discharge hose (where fitted) remains in good condition.
- c) Check the operation before replacing head cap.
- d) Wash the extinguisher with fresh water and refill it. Examine and check the 'O' ring seals. Replace the head and dip tube.
- e) Replace the extinguisher if there is any sign of external or internal corrosion.



8. FOAM BASED EXTINGUISHERS – GAS EXPELLED

8.1 Monthly

- a) Check that all extinguishers are in their correct locations. See the Fire Equipment Location List.
- b) Lift each extinguisher to ensure that it has not been discharged or emptied.
- c) Check that the nozzle is not obstructed or encrusted, and that the plunger is free to move, by turning it between the thumb and fingers (do not depress the plunger).
- d) Check that the extinguisher shows no sign of discharge or has visible defects such as dents or corrosion.



8.2 Annually

Selected extinguishers:

- a) Test 25 per cent of the extinguishers by discharging them. Do this in rotation, so that each is discharged at least once every 4 years. Each extinguisher tested should provide a 4m jet of foam of good consistency for not less than 30 seconds.
- b) After discharge, wash the extinguisher out thoroughly with clean water; then drain it, carry out the checks below ('all extinguishers') and recharge it.

8.3 Remaining extinguishers:

- a) Check the liquid level against the level marker and top up if necessary with clean water. Replace the cartridge if the level has dropped by more than 25 millimetres.
- b) Unscrew the gas cartridge; check that the sealing disc is intact and that the plunger works freely. Replace the safety guard.
- c) Check that the nozzle, vent holes in the cap, branch-pipe strainer and (where fitted) the internal discharge tube are clean and serviceable.



9. FOAM BASED EXTINGUISHERS – STORED PRESSURE

9.1 Monthly

- a) Check that all extinguishers are in their correct locations. See the Fire Equipment Location List.
- b) Check that the needle of the pressure indicator is approximately in the centre of the GREEN sector.

If the needle is in the RED sector:

- a) Refill the extinguisher with solution, including foam concentrate, premixed in a bucket. Use fluorochemical concentrate only. To avoid foaming, use a long-necked funnel to pour the mixture into the extinguisher.
- b) Replace the dip tube and head. The discharge hose should be retained by the hose dip. Tighten the nut in a clockwise direction sufficiently to clamp the 'O' ring seal. Do not over tighten the nut.
- c) Pressurise the extinguisher by connecting the air supply to the valve. Wait until the indicator needle is in the centre of the GREEN sector, and then remove the airline.
- d) Replace the valve cap.

If an airline is not available, the air supply can be provided by a local garage pump, a car foot pump, or a small portable mains-operated or rechargeable air pump.

9.2 Annually

Perform the monthly checks and in addition:

- a) Check that the hose nozzle is clear.
- b) Check the reliability of the gauge by checking the internal pressure at the Schraeder valve connection to ensure gauge reliability.
- c) Replace the valve cap.

Selected extinguishers:

Test 25 per cent of the extinguishers each year by discharging them. Do this in rotation, so that each is discharged at least once every 4 years.

9.3 After use

- a) Check that the nozzle, strainer, vent holes in the cap, and (where fitted) the internal discharge tube are clean.
- b) Check that the discharge hose (where fitted) remains in good condition.
- c) Check the operation before replacing head cap.
- d) Wash the extinguisher with fresh water and refill it. Examine and check the 'O' ring seals. Replace the head and dip tube. Clean the outside of the extinguisher.
- e) Replace the extinguisher if there is any sign of external or internal corrosion.



10. DRY POWDER EXTINGUISHERS – GAS EXPELLED

Note: dry powder extinguishers are acceptable only where water and/or gas extinguishers and/or charges are difficult to obtain and service.

10.1 Monthly

- a) Check that all extinguishers are in their correct locations. See the Fire Equipment Location List.
- b) Lift each extinguisher to ensure that it has not been discharged or emptied.
- c) Check the container. Replace if it is damaged or corroded.



10.2 Annually

- a) Examine the vent holes in the cap. If the holes are blocked, clear them and then slowly open the container. Do this in a dry room to minimise the effects of dampness.
- b) The container should be replaced if it is damaged or corroded.
- c) Weigh the container. If it does not contain the correct weight of powder, which is printed on the body of the extinguisher, top it up with powder of the same type. (Different powders if mixed could cause a chemical reaction and a dangerous build-up of gas pressure).
- d) Replace the gas cartridge if the pressure indicated is below the manufacturer's recommendation, or if the cartridge is damaged or corroded.
- e) Examine the nozzle, hose and discharge pipe for blockages. Clean and clear blockages if necessary.
- f) Examine the hose and washers for wear. Replace them if they are not in good condition.

10.3 Extinguishers designed for the removal of the operating mechanism:

Check for free movement and replace any worn parts. Replace any safety clip or fit new wire seal. Do not use oil or grease on these parts.

Note: the maximum permitted period between test discharges or fire use is 5 years.



11. DRY POWDER EXTINGUISHERS – STORED PRESSURE

Note: these comments apply to field-refillable extinguisher

11.1 Monthly

- a) Check that all extinguishers are in their correct locations. See the Fire Equipment Location List.
- b) Check each extinguisher to ensure that it has not been discharged or emptied.
- c) Check the container. Replace it if it is damaged or corroded.

11.2 Annually

- a) Examine the extinguisher body internally and externally; use an illuminating probe if possible. Replace the container if it is corroded or damaged.
- b) Examine the vent holes in the cap. Clear any blockage, and then open the container slowly.
- c) Examine nozzle, hose and internal discharge tube for blockages if necessary.
- d) Check the operating mechanism and discharge valve (if fitted) for free movement and rectify or replace as necessary. Do not use grease or oil on these parts.
- e) Replace all washers if not in good condition.
- f) Refill and re-pressurise the extinguisher in accordance with manufacturer's instructions.
- g) Do not over pressurise the extinguisher bodies.
- h) Replace the safety clip or fit new wire seal or equivalent (as fitted).

Note: the maximum permitted period between test discharges or fire use is 5 years.



12. FIRE EXTINGUISHERS – OTHER

12.1 Halon Extinguishers

Halon extinguishers will not be supplied new; existing ones should be replaced immediately.



12.2 Carbon Dioxide (CO₂) Extinguishers

Monthly

Each extinguisher:

- Check that all extinguishers are in their correct locations. See the Fire Equipment Location List.
- Check that the safety pin is in position and that the wire and plastic seals are intact. Some extinguishers are fitted with a visual indicator that provides an internal check for serviceability.



Annually

Each extinguisher:

- Check the weight of the complete extinguisher against that marked on record label. If the extinguisher shows a loss of more than 10 per cent in the weight of the contents, proceed as identified in the FCO Overseas Fire Code.

Note: All CO₂ extinguishers in this category contain a liquefied gas under pressure. In some types the container is detachable. If the extinguisher has been discharged for any reason, or if a loss of gas is suspected following routine testing, it is essential that the extinguisher be discharged completely in the open air before the empty container is unscrewed from the operating head.

12.3 Any other extinguisher types should be inspected and tested in accordance with the manufacturers instructions.



13. HYDRAULIC HOSE REELS

There are many different types of hose reels including fixed or swinging bodies, manual or automatic application and 19mm or 24mm hoses. The following should be followed for all types.

13.1 Monthly

- a) Check for leaks; check that the nozzle control operates (on and off) easily.
- b) Check the hose is properly stowed and that the water is turned off at the nozzle and at the control valve on the fixed pipework.



13.2 Annually and After Use

- a) Run out the hose, and ensure that the reel revolves freely.
- b) Take the nozzle to a place where water can be discharged without causing damage. Operate the controls and make sure they work freely. A water jet of not less than 6m should be obtained.
- c) Where water cannot be discharged without causing damage;
 - i. Close the nozzle. Fully open and then close the control valve on fixed pipework. Run out the hose and drain it into a bucket using only the nozzle valve.
 - ii. Before rewinding hose, close the control valve on the fixed pipework. Open the nozzle control and drain off as much water as possible.
 - iii. Close the nozzle control and rewind the hose on to the reel.
 - iv. Finally, make sure that both controls are closed.

In cases where the local Water Authority insists that hose reels be sealed off from the mains, arrangements should be made with them before annual tests are made; they will then replace the seals after the tests or after a hose reel has been used.



14. FIRE BLANKETS

14.1 Monthly

Check that all containers are in their correct locations (Form FP9) and that they are of the approved quick-release type.

Check that each container contains a blanket.

14.2 After use

Blankets should be clean and serviceable and correctly rolled or folded.





15. SUPPRESSION SYSTEMS - SPRINKLER

The Post Fire Safety Manager should organise the inspection procedure and action recommended below, and bring to the notice of all staff the need for care to avoid damaging the installation.

15.1 At all times

A watch should be kept on the following points and staff should report any deficiencies:

- a) The main stop valve should be secured open by means of padlocked straps. Chains or wire should not be used.
- b) The valve group should be kept clear of obstructions.
- c) The manufacturer's instruction card should be displayed near the valve group.
- d) Sprinkler heads should be unobstructed. Goods should not be stored within 0.5m vertically below the general level of sprinkler heads. In case of high piled storage, i.e. higher than 4m from the floor, a spacing of 1m below sprinkler heads applies.
- e) Sprinkler heads should not be covered against frost or mechanical damage, e.g. by paper bags, rags, tins etc. (this could result in failure to operate efficiently in an emergency).
- f) A supply of spare heads of the correct type should be available in a box provided near the valve group.
- g) The location plate "SPRINKLER STOP VALVE INSIDE" should be kept clean and easily visible.



15.2 Weekly inspection before premises are left

On a weekly basis a check should be made by a responsible person to ensure that the above are in order.

15.3 Monthly

A separate test of the alarm gong should be made as explained on the manufacturer's instruction card and recorded on the Form FP4. A general check of the installation should also be carried out covering all the above items.



16. SUPPRESSION SYSTEMS – GENERAL

16.1 A wide variety of suppression systems are available including:

- Water mist
- Oxygen reduction
- Gaseous
- Other

All these systems should be maintained in accordance with the manufacturers instructions.

16.2 **Water mist** – This type of system uses water as the extinguishing medium but as well as wetting fire and fire load it relies on the fire turning the water to steam, expanding and reducing the oxygen concentration below 17% at which point flaming combustion cannot generally occur.

For this reason water mist is ideal for small enclosed spaces however it is heavily affected by ventilation and air flow, and nozzles can be blocked quickly by a contaminated water source. Some also claim water mist can be used for IT type risks as it uses such little water however these claims should be researched carefully before adopting.

Pump and tank, and cylinder type systems are available.

16.3 **Oxygen reduction** – By introducing nitrogen into an enclosure the oxygen content can be reduced to below 17% and the area can still be occupied. This is a very good system for preventing fires but relies heavily on sealing the enclosure and reducing air leakage. It also operates permanently so is a continuously operating system rather than something that works in the event of a fire.

Operators in the enclosures should take a break in line with manufacturer's instructions or at least every 6 hours.

16.4 **Gaseous systems** – Instead of maintain the environment at 17% oxygen as in the previous system a gaseous system is designed to react in the event of a fire and then reduce the oxygen level to below 17% by introducing an inert gas.

This has the same issues regarding needing a well sealed area and as it is less controlled the oxygen reduction could become hazardous for occupants of a room hence why these systems are generally used to protect cabinets rather than rooms.

It is important to note that although the fire can be extinguished the heat is not rapidly removed so beware of opening the door to an enclosure which has activated as you can release the extinguishing medium and the fire can reignite.

16.5 Other – There is a continuous evolution of new methods of fire suppression systems and they must all be checked, tested and maintained in accordance with the manufacturers instructions.