

F-GAS

SUPPORT

Promoting Compliance with F Gas and Ozone Regulations

Guidance for Fire Protection Sector

1. Introduction

This Information Sheet provides further guidance related to the impact of the EC F gas Regulation on the fire protection sector. It is aimed at helping both end-users and companies involved in installation, maintenance or servicing of HFC fire protection systems.

Other Information Sheets give details about the usage of F gases, key obligations and qualifications and certification requirements in relation to fire protection systems and the EC F gas Regulations. In this Information Sheet we provide some practical guidance.

Personnel will be working on behalf of the Operator who is defined in the Regulation and is discussed in Information Sheet FP 3. Personnel are only allowed to work on the equipment if they have completed suitable training and are appropriately qualified or working under the direct supervision of qualified personnel while they complete their training and certification.

Before any work is carried out it is advisable to look at the equipment records or log book. This should identify who the “operator” is and the history of work already performed on the equipment.

2. How should leak testing be carried out?

Stationary fire protection systems containing 3 kg or more of F gas need regular leak tests. The leak test frequency is either once or twice per year – see Information Sheet FP 3 to confirm the frequency of testing. In practice most fire protection systems are already leak checked twice per year in accordance with ISO 14520.

Commission Regulation 1497/2007 sets out details of leak testing requirements. The test has to be carried out by certified personnel (see Information Sheet FP 5).

For fire protection systems where all of the HFC is contained within a sealed pressure vessel, the quantity of HFC can be determined by weight or liquid level. Any leak in this situation is cumulative and will be determined by regular checking. For fire protection systems the leak rates are so low that systems remain in service for many years without a discernable loss of extinguishant. A good indication of a leak for HFCs which are super-pressurised with nitrogen is the use of pressure monitoring. All of these containers are fitted with pressure gauges for this purpose. ISO 14520 states that a container can remain in service until an accumulated loss of weight of 5% or loss of pressure of 10%.

Pressure gauges and weight-monitoring devices need to be checked every 12 months to ensure their proper functioning.

One or more of the following situations shall constitute a presumption of leakage:

- ◆ A fixed leakage detection system indicates leakage;
- ◆ A container shows a loss in pressure, adjusted for temperature, of more than 10%;
- ◆ A container shows loss in extinguishant quantity of more than 5%;
- ◆ Other signs indicating charge loss.

The operator must ensure that if a leak is found it must be repaired or a replacement carried out by appropriately certified personnel. The operator must also ensure that a leakage test is carried out prior to recharging. Regarding newly installed systems, these should be checked for leakage immediately after they have been put into service.

3. What type of automatic leak detection system can be used?

Systems with more than 300 kg must be fitted with an automatic leakage detection system, which is defined as:

“a calibrated mechanical, electrical or electronic device for detecting leakage of refrigerants which, on detection, alerts the operator”.

The detection system must be checked at least once a year to ensure proper functioning.

For any system fitted with a leakage detection system (including those below the mandatory 300 kg threshold), the frequency of leak checking can be halved. Although an annual check remains the minimum frequency. The maximum frequency in respect to ISO14520 is every 6 months.

Automatic leak detection can be achieved by continuous weight monitoring or the fitting of a pressure switch, both of which can automatically alarm to alert the operator in the event of any leakage.

For HFC-23 which is not super-pressurised then automatic monitoring of these containers is by weight.

4. What records must be kept?

Records must be kept for each fire protection system using 3 kg or more of F gas refrigerant, as specifically required by the EC F gas Regulation. The records must include:

- ◆ The quantity and type of F gas installed in each system,
- ◆ Any quantities of F gas added,
- ◆ The quantity of F gas recovered during servicing, maintenance and final disposal,
- ◆ The identity (including address and telephone number) of the company or personnel who performed the servicing or maintenance, as well as the dates and results of leakage checks and leakage detection system checks.

These records shall be made available on request to the competent authority and to the Commission. Personnel working on the equipment – employed via a contractor or as in-house personnel – are required to update the records kept by systems operators.

5. How is F Gas recovered from end user fire protection equipment?

F gas is not recovered on site, but is sent to specialist facilities.

6. What equipment needs to be labelled?

All new fire protection systems containing F gas must be labelled, irrespective of size, as required by the EC F gas Regulation.

The labelling rule applies to equipment placed on the market after 1st April 2008.

Existing equipment does not need to be labelled, although it is good practice to label all equipment. If you have existing systems containing greater than 3 kg then it is necessary to record the type and amount of refrigerant used (as per Section 4 above).

A mandatory label must include:

- ◆ The text ‘Contains fluorinated greenhouse gases covered by the Kyoto Protocol’.
- ◆ The abbreviated chemical names for the fluorinated greenhouse gases contained or designed to be contained in the equipment using accepted industry nomenclature standard to the equipment or substance,
- ◆ The quantity of the fluorinated greenhouse gases, expressed in kilograms.

7. Are there any F Gas bans related to this sector?

There are no bans in the EC F gas Regulation related to the use of HFCs in fire protection systems.

8. How do you estimate F gas charge?

If you have established that an F gas is being used in a fire protection system or portable fire extinguisher, the next step is to find out how much F gas is in the system. This is important as it affects the way that the Regulations will be applied. The key size thresholds specified in the Regulation are as follows:

- ◆ All systems with less than 3 kg of F gas are not covered by the obligation to carry out regular leakage checks and to keep records.
- ◆ For all systems containing 3 kg or more of F gas records must be kept.
- ◆ There are further thresholds at 30 kg and 300 kg which are used to define the regularity of leak testing required and the requirements for automatic leak detection.
- ◆ All fire protection extinguishant containers should be adequately labelled. In the unlikely event that this is not the case the service personnel should investigate and advise or the Original Equipment Manufacturer's records will be able to help together with any recharge history.



How to Contact F-Gas Support:

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This document has been prepared by F-Gas Support: the information provided is intended as guidance and must not be taken as formal legal advice nor as a definitive statement of the law. Ultimately only the courts can decide on legal questions and matters of legal interpretation. If you have continuing concerns you should seek legal advice from your own lawyers.

F-Gas Support is a Government funded team set up to help organisations understand their obligations under the EU Fluorinated Greenhouse Gases and Ozone Regulations. F-Gas Support is also working with Regulators to promote compliance. It is being run on behalf of Defra and the devolved administrations by the Local Authorities Coordinators of Regulatory Services (LACORS) and EnviroS.