

F-GAS REGULATIONS – DO THE CHANGES AFFECT YOU?



HEADLINES:

- CO2 thresholds are now used instead of quantity of refrigerant
- Leak detection systems to be included as part of a maintenance regime
- Operator and Contractor must keep copies of F-Gas records for 5 years
- High GWP refrigerants to be phased down from 2020
- Medium GWP refrigerants to be phased down from 2022
- All systems with a CO2 equivalent greater than 500 tonnes must have a fixed leak detection system installed.

Hot on the heels of R22 Replacement, changes to F-Gas regulations came into effect in January 2015 after years of consultation and negotiation across Europe.

But how do these changes affect our customers?

Do you know the new threshold limits?

Or how often your equipment has to be checked?



Here at ACE Refrigeration, we can always help you stay compliant with F-Gas regulations, either as part of our service and maintenance contracts, or by installing fixed leak detection units to your refrigeration plant.

Fluorinated greenhouse gases (F-gases) gases are a family of chemicals that contain fluorine.

Most F-gases are very powerful greenhouse gases which contribute to global warming if emitted into the atmosphere.

HFCs (Hydrofluorocarbons) are common F-gases found in air conditioning and refrigeration systems.

The central element of these revised regulations is part of the phase down of HFC Refrigerants with a global warming potential (GWP) greater than 2500, with a complete ban on new equipment using these refrigerants effective from 2020 onwards.

However, recycled and reclaimed HFCs with greater than 2,500 GWP will still be allowed for servicing existing plants until 2030.

The previous classification confirming leak detection quantity per year based on refrigerant charge thresholds have now been replaced by a system based instead on carbon emissions per year.

All systems with a CO2 equivalent greater than 500 tonnes must have a fixed leak detection system installed.

But for any system with fixed leak detection installed, the quantity of leak tests required is reduced by 50%

Leak Check Frequency*	2006 Regulation	2014 Regulation		
	kg threshold for all HFC refrigerants	tonnes CO ₂ e threshold for all HFC refrigerants	kg threshold for HFC 404A	kg threshold for HFC 134a
Annual	3 kg	5 tonnes CO ₂ e **	1.3 kg	3.5 kg
Every 6 months	30 kg	50 tonnes CO ₂ e	13 kg	35 kg
Every 3 months	300 kg	500 tonnes CO ₂ e	127 kg	350 kg

* Leak check frequency is halved if automatic leak detection system is installed

** The threshold for annual leak checks of hermetically sealed equipment is 10 tonnes CO₂

So do these changes affect you?

Well it depends on what refrigerants your current plant operates with, and how much you are using.

Different refrigerants have differing thresholds; all based on the carbon emissions.

The table below details the comparative refrigerant charge for the refrigerant type based on the new threshold.

Fluorocarbon refrigerant GWP's and CO2 equivalent chart

Refrigerant	Other		5 T	50 T	500 T
	Names	GWP	CO ₂ Eq.	CO ₂ Eq.	CO ₂ Eq.
23		14800	0.3	3.4	34
32		675	7.4	74.1	741
134a		1430	3.5	35.0	350
125		3500	1.4	14.3	143
245fa		1030	4.9	48.5	485
404A		3922	1.3	12.7	127
407A		2107	2.4	23.7	237
407C		1774	2.8	28.2	282
407D		1627	3.1	30.7	307
407F	Performax LT™	1825	2.7	27.4	274
410A		2088	2.4	23.9	239
417A	ISCEON® MO59	2346	2.1	21.3	213
422A	ISCEON® MO79	3143	1.6	15.9	159
422D	ISCEON® MO29	2729	1.8	18.3	183
423A	ISCEON® 39TC™	2280	2.2	21.9	219
424A	RS44	2440	2.0	20.5	205
426A	RS24	1508	3.3	33.2	332
427A	FX100	2138	2.3	23.4	234
428A	RS52	3607	1.4	13.9	139
434A	RS45	3245	1.5	15.4	154
437A	ISCEON® MO49plus	1805	2.8	27.7	277
438A	ISCEON® MO99	2265	2.2	22.1	221
442A	RS50	1888	2.6	26.5	265
507		3985	1.3	12.5	125
508A		13214	0.4	3.8	38
508B	Suva 95	13396	0.4	3.7	37
-	ISCEON® MO89	3805	1.3	13.1	131

Data compiled from Air conditioning and Refrigeration Industry Board (ACRIB) F-Gas implementation group [online] accessed (15 09 2014)



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A 15% loss of refrigerant can equate to a 50% drop in operating efficiency.

F-Gas leak checks and the legal requirement for leaks and any consequent repairs to be recorded in a maintenance log will help to

- Reduce such efficiency losses
- Reduce energy costs
- Reduce refrigerant gas consumption
- Reduce potential stock loss

Under the F-Gas regulations, system and equipment operators have an obligation to prevent leaks.

If you operate stationary refrigeration and air conditioning systems, you must prevent any leaks or take action to remedy the situation immediately.

There is now a legal requirement to have all refrigerant leaks repaired, regardless of cost or technical implications; you are risking a fine of up to £5,000 for non-compliance.

Records will also need to be maintained for all equipment with a refrigerant charge of 5 tonnes CO₂ equivalent and kept for five years. This is the responsibility of the owner of the equipment.

Regulations will strengthen existing measures and introduce a number of far reaching changes. The aim is to cut f-gas emissions across Europe by two thirds compared to 2014 levels.



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Here at ACE Refrigeration, we can

- Offer a complete F-Gas Audit Service
- Devise a Leak Detection Programme
- Complete an F-Gas Asset list
- Complete and update an F-Gas register in accordance with regulations
- Supply, Install, Service and Maintain Fixed Leak Detection systems

If you are concerned about whether or not you are meeting these new regulations, or you want to speak to us regarding Leak Detection systems, then call 0141 556 7691 or email sales@acerefrigeration.co.uk today!

CASE STUDY – RK DRYSDALES



In February 2015, we installed Leak Detection modules to plant across RK Drysdale's site in the Scottish Borders.

One of our existing customers, Drysdale's is one of the UK's top vegetable suppliers; providing British supermarkets with more than 14,000 tonnes of fresh Scottish vegetables all year round.

Previously Drysdale's came to ACE Refrigeration when an increase in production requirements created the need for more than 5,500 cubic metres of chilled production space.

ACE were responsible for the design, supply and installation of two chilled warehouses, totalling 3,000 cubic metres of chilled space, plus a 2,500 cubic metre temperature controlled loading bay.

The design incorporated a remote temperature monitoring and management system as well as the installation of a large number of control probes, giving Drysdale's the confidence they required to ensure the total integrity of their products at all times.

CASE STUDY – WILLIAM SWORD BAKERY



ACE Refrigeration also recently installed a new screw compressor pack for William Sword Bakery as they required R22 Replacement for their Spiral Freezer.

As well as replacing the evaporator coil, ACE Refrigeration installed a pack consisting of three compressors offering increased reliability and efficiency – screw compressor packs allow for output to meet demand when applications with varying loads are required.

Leak Detection was also installed as part of this project.

See all our Customer Case Studies and Client Testimonials on our website at acerefrigeration.co.uk



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SERVICE & MAINTENANCE

Our Service & Maintenance Department has dedicated teams of engineers who work together to achieve a service, which is fast, effective and reliable. Our reputation has been built upon our attention to detail and rapid reaction times.

To help minimise equipment breakdown and the inevitable disruption to your business, we offer highly competitive maintenance contracts, individually tailored to meet your needs.

And we can be contacted 24 hours a day, 365 days a year!

- National capability
- Engineer Vehicle Tracking
- Bespoke maintenance packages
- Plant operation analysis reports
- Emergency Call out service 24/7/365
- F-Gas compliance
- Dilapidation reports
- Quality Assurance Management Systems
- Extended warranties



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Clik Business Management - Direct Client Benefits

Clik assists ACE Refrigeration to offer a fast and effective service to our customers, with same day reporting and quotations supplied through Clik 4 Service Support System and the ACE Refrigeration Help Desk.

In addition, our clients can also access our Clik 4 Service Support System for reviewing:

- Job Status
- Quotation status
- Parts awaiting status
- Engineering field service reports
- Planned maintenance schedules

Clik 4 Service Support System also holds all our site and customer profiles including:

- SLA (Service Level Agreements)
- KPI (Key Performance Indicators)
- F-Gas Registers
- Plant and equipment details

Call us on 0141 556 7691 or email technicalsupport@acerefrigeration.co.uk for more details

www.acerefrigeration.co.uk