

## INTRODUCTION

CITB, together with its network of approved Centre's, provide cost effective, high quality training and impartial assessments for operatives working on refrigeration, air conditioning and heat pump systems.

The scheme is broken into TWO areas of work:

- Those that meet the requirements of the Environmental Protection Act and specifically EC Regulation 842/2006 (commonly known as the 'F-gas' Regulation).
- Those outside the scope of the 'F gas' Regulations.

All operatives must be issued with the Assessment Information (GCS-PU-003) prior to any assessments being undertaken.

## THE SCOPE

This scheme is designed for operatives who install, service and repair, recover or leak check refrigeration, air conditioning and heat pump systems and require the following skills:

- safe handling techniques
- pipework and jointing skills
- recovery of refrigerants only (restricted to small systems only)
- leak and heat checking of systems without system break in.

The courses offer training and assessment in the knowledge and understanding required to safely handle ODS/HCFC, HFC and HC refrigerant, and/or correctly braze the pipework of such systems and safely handle ammonia refrigerant.

The scheme does not include essential electrics, electrical installations, wiring from electrical circuit supply points or electrical fault finding techniques other than basic electrical measurements.

## THE F GAS SCHEME

The assessment can be taken via either Initial assessment or reassessment depending upon your current experience and qualifications

- **Initial assessment:** For all categories which are being undertaken for the first time or do not fall into 'reassessment'. These will be subject to pre-requisite qualifications and/or current refrigeration qualification requirements.
- **Reassessment:** This can only be undertaken if you hold and can present to your assessment centre your original (**NOT A PHOTOCOPY**) expiring certificate of refrigeration qualification which is either current or less than 12 months past its expiry date. *You may undertake reassessment up to six months in advance of your existing certificate expiring and will receive an MOT style certificate. Example. Your current certificate expires on 1/7/2015. You may undertake your assessment at any time between the 2/1/2015 and the 1/7/2015 and will receive an expiry date on your new certificate of 1/7/2020*

The scheme is suitable for those individuals who meet the entry requirements.

To comply with F-gas Regulation requirements select from the four options:

- Category I – leakage, recovery, install, maintain, service (J11)
- Category II – leak check, install, service, maintain <3 kg<6 kg (J12)
- Category III – recovery of refrigerant (J13)
- Category IV – leakage checking (J14).

## SAFE HANDLING OF REFRIGERANTS, EC 842/2006 CATEGORIES I AND II (J11 and J12)

This is designed for operatives who wish to carry out the installation, servicing, maintenance, removal/recharging and leak testing of refrigerants safely within systems to the standard required by EC Regulation 842/2006, known as the 'F-gas' Regulation. (Note: Category II (J12) is restricted to systems with less than 3 kg of refrigerant charge (6 kg if hermetically sealed only.)

Note: The operative is required to complete a joint by either welding/brazing or soldering. This assessment does not replace the J04/J05 qualification or confirm that the operative has been fully tested in making joints based on the British Refrigeration Association (BRA) test piece utilising an oxy-fuel welding set.

## Assessment

The assessment consists of the following written and practical assessments:

- health and safety
- building a leak tight piping system (welding/brazing/soldering)
- leak testing both direct and indirect methods
- evacuation/dehydration
- checking cylinder weights/capacity
- installation of major system components
- charging refrigerant
- draining F-gas contaminated oil
- system tests
- refrigerant recovery and handling
- basic thermodynamics
- use of logs to determine actions and record significant data
- environmental impact
- legislation and regulations
- refrigeration theory
- refrigeration practices.

## RECOVERY OF REFRIGERANTS, EC 0842/2006 CATEGORY III (J13)

This is designed for operatives who wish to carry out the recovery of refrigerant from appliances and systems, containing less than 3 kg (6 kg if hermetically sealed) of fluorinated greenhouse gas charge.

### Assessment

This consists of the following written and practical assessments:

- health and safety
- checking cylinder weights/capacity
- refrigerant recovery and handling
- environmental impact
- legislation and regulations.

## LEAK CHECKING WITHOUT SYSTEM BREAK IN, EC 842/2006 CATEGORY IV (J14)

This is designed for operatives who wish to carry out leak checking of systems without breaking into the system.

### Assessment

This consists of the following written and practical measurements:

- health and safety
- checks for leakage – indirect and some direct methods without system break in
- basic ISO standard units
- environmental impact of refrigerants and corresponding environmental regulations.

## CERTIFICATION

### Operative registration

On successful completion of your assessment categories, an application for certification will be sent to CITB.

If they decide to recommend the issue of a certificate of competence, CITB will issue a certificate and card and enter you on their data base. Your certificate and card will be recognised through member states of the European Union (See **EU Mutual Recognition** below)

### EU Mutual Recognition

Article 5 of the EU F gas Regulation, EC 842/2006, requires that Member States give mutual recognition to certification of suitable qualifications from other EU countries. The conditions for mutual recognition are set out in Article 13 of Commission Regulation EC 303/2008:

In GB & NI, the EU F Gas Regulation is implemented by the Fluorinated Greenhouse Gases Regulations 2009 (SI No. 261). Construction Industry Training Board (CITB) is a named personnel certification and evaluation body as set out in Article 19 of these Regulations which relates to the certification and evaluation bodies for the purposes of Article 5 of Commission Regulation EC/303/2008 (issue and contents of certificates).

This certificate meets the minimum requirements specified in Commission Regulation EC/303/2008.

## THE NON F GAS SCHEME

If outside the scope of F-gas Regulation requirements select from the five options below.

- safe handling of refrigerants (J01) (Note: Defra refers to as 206710)
- safe handling of anhydrous ammonia (J02)
- pipework and brazing industrial (J04)
- pipework and brazing commercial (J05)
- recovery of refrigerants (J06).

### SAFE HANDLING OF REFRIGERANTS (J01)

This is designed for operatives who wish to carry out the removal/recharging and leak testing of refrigerants safely within systems out of the scope of the F-Gas regulations.

#### Assessment

The assessment consists of the following written and practical assessments:

- health and safety
- pressure leak test
- evacuation/dehydration
- checking cylinder weights/capacity
- charging refrigerant
- system commissioning tests
- refrigerant recovery and handling
- environmental impact
- fluorocarbon control/alternatives
- legislation and regulations
- refrigeration theory
- refrigeration practices
- identification of refrigerants and contaminants.

### SAFE HANDLING OF ANHYDROUS AMMONIA (J02)

This is designed for operatives who wish to carry out the removal/recharging of systems with anhydrous ammonia safely within systems.

#### Assessment

This consists of the following written and practical assessments:

- establish the system and method to be used
- gain site permission provide information
- health and safety
- refrigerant removal (pump down)
- breaking into systems
- pressure leak test system
- evacuation/dehydration of system
- repressurising system
- safety and regulations.

### PIPEWORK AND BRAZING INDUSTRIAL (J04) OR COMMERCIAL (J05)

These are designed for operatives who wish to carry out pipework and brazing on systems in either a domestic, commercial or industrial environment.

#### Assessment

This consists of the following written and practical assessments:

- health and safety
- materials preparation
- equipment preparation
- lighting and shutting down procedure
- brazing procedure
- joint inspection.

## **RECOVERY OF REFRIGERANTS (J06)**

This is designed for operatives who wish to carry out the recovery of refrigerant from appliances and systems out of scope of the F-Gas regulations.

### **Assessment**

This consists of the following written and practical assessments:

- health and safety
- checking cylinder weights/capacity
- refrigerant recovery and handling
- environmental impact
- legislation and regulations
- refrigeration theory
- identification of refrigerants.

## **ENTRY REQUIREMENTS**

The selection of participants for assessment will be in accordance with the following criteria.

### **Category 1**

Operatives having recognised qualifications with a refrigeration content from the following trades:

- refrigeration
- air conditioning

### **Category 2**

Operatives with relevant allied trade experience, such as:

- plumbing
- heating and ventilating
- gas
- electrical
- large scale refrigeration/air conditioning (e.g. experienced ammonia plant operator).

### **Category 3**

Category 3 applicants are regarded as new entrants to the industry. As such, they are without a relevant related qualification and/or experience, entering employment for the first time or changing career direction. An applicant in this experience will not be able to provide acceptable evidence of relevant qualifications and/or work experience. Therefore the application is not suitable for the courses above, with the exception of recovery of refrigerants Category III (J13) or leak checks Category IV (J14).

<b>INITIAL ASSESSMENT</b>	<b>Safe handling of refrigerants J11 or J12</b>	<b>Recovery of refrigerants J13</b>	<b>Leak checking without system break in J14</b>
<b>Training guidance time (Experience 2)</b>	18 hours	6 hours	10 hours
<b>Practical assessment time</b>	4 hours	2 hours	2 hours
<b>Theory assessment time</b>	1 hour 30 minutes	25 minutes	45 minutes

<b>REASSESSMENT</b>	<b>Safe handling of refrigerants J11 or J12</b>	<b>Recovery of refrigerants J13</b>	<b>Leak checking without system break in J14</b>
<b>Training guidance time (CPD update)</b>	6 hours	4 hours	6 hours
<b>Practical assessment time</b>	3 hours 30 minutes	2 hours	2 hours
<b>Theory assessment time</b>	30 minutes	25 minutes	30 minutes

	<b>Safe handling of refrigerants J01</b>	<b>Safe handling of anhydrous ammonia J02</b>	<b>Pipework and brazing Industrial – J04 Commercial – J05</b>	<b>Recovery of refrigerant J06</b>
<b>Training guidance time (Experience 2)</b>	10 hours	9 hours 30 minutes	7 hours 30 minute	10 hours 30 minutes
<b>Practical assessment time</b>	1 hour 30 minutes	3 hours 30 minutes	4 hours	1 hour
<b>Theory assessment time</b>	2 hours 30 minutes	1 hour	2 hours 30 minutes	2 hours 30 minutes

**It should be noted that assessment times indicated are for an initial attempt only.**

Times indicated are per individual assessment and may be reduced where multi-option assessments take place. Contact the centre for further information.

## VARIATION REQUIREMENTS

### Assessments (Theory)

This scheme uses assessment record books, which contain a number of different question papers requiring a written response. A 100% correct response is required for each question. Two attempts will be allowed.

If any questions are answered incorrectly after the second attempt, then the individual will be orally questioned. If the response is incorrect, the individual will be deemed to have failed and will have to attempt the assessment section again after a suitable time interval.

## RESOURCE MATERIAL

### Training

Each person undertaking training will be issued with the appropriate CITB publications, as follows:

- Safe handling of refrigerant pack including pipework and brazing (R1)
- Safe handling of anhydrous ammonia pack (R3).

In addition, training centres will provide appropriate material for training purposes, e.g. normative documents and manufacturers' instructions.

## Assessment

The following resource material is acceptable for use during assessments:

- manufacturers' instructions, which will be provided for all equipment and appliances within the assessment area
- statutory documents and codes of practice
- CITB reference manuals.

The following resource material is not acceptable for use during assessments and may not be taken into the assessment area:

- Publications which provide specific assessment information
- CITB course workbooks.

## OPERATIVE REGISTRATION – AIR CONDITIONING AND REFRIGERATION INDUSTRY BOARD (ACRIB)

On successful completion of your assessment experiences, an application for certification will be sent to CITB, who will issue an appropriate certificate and card.

The following categories of the refrigeration scheme are recognised by ACRIB for registration on their register:

- safe handling of refrigerants (J01)
- safe handling of ammonia (J02)
- safe handling of refrigerants Category I (J11)
- safe handling of refrigerants Category II (J12)
- recovery of refrigerants Category III (J13)
- leakage checking Category IV (J14).

Further details may be obtained from an approved CITB refrigeration scheme centre.

## SURVEILLANCE

To ensure continued competence compliance, certificate holders will be required to undertake reassessment at five year intervals. CITB will issue a reminder six months prior to the expiry date, advising the need for reassessment at an approved assessment centre.

## GENERAL INFORMATION

CITB is committed to the provision of equal opportunities and the impartial assessment of all operatives attending its approved Centre's. CITB equal opportunities policy will ensure that no operative receives less favourable treatment than any other on the grounds of race, colour, nationality, ethnic origin, sex, marital status, religion, sexuality, political belief, disability or age.

In order to maintain quality and excellence, CITB, in accordance with national standards, will continually update its scheme and approved centre personnel. This enables it to reflect changes in legislation, new technology, British Standards, Codes of Practice, Building Regulations, equipment, manufacturers' requirements and industry agreed standards.

This commitment to quality applies to all CITB approved training and assessment Centre's. It is underpinned by the adoption of internal quality assurance systems designed to guarantee that appropriate standards are developed and maintained

CITB is referred to throughout. It should therefore be noted that CITB certification is carried out by the Utilities Engineering department.

**Training prior to undertaking assessment is not mandatory. However, in most cases it is recommended to ensure operatives are aware of the most recent changes to legislation, British Standards and industry best practice. It should be noted that attendance for training will not influence the independent impartial assessment which is carried out under the control of CITB**