

INDUCTION PROGRAMME



Induction Guide

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1. Introduction

How to use this document

This document has been produced as a guide for learners undertaking the *FG01 or FG02–F-Gas Regulations - Preparation Theory Course* in advance of registering and being assessed for the *City & Guilds 2079 Level 2 Award F-Gas Regulations*. This qualification is designed to enable refrigeration and air conditioning engineers to meet legal requirements in relation to the qualifications required to work with Fluorinated Greenhouse Gasses, otherwise known as F Gasses.

The **F Gas Regulations** have been put in place by **DEFRA** to help EC countries meet the Kyoto protocol targets.

It is important that you familiarise yourself with the contents of this document. It includes information to help you understand the processes involved and some FAQs (Frequently Asked Questions).

2. About Star Refrigeration and EKGTA

Star Refrigeration

Star is the UK's largest independent industrial refrigeration engineering company. Star is renowned for innovation and constantly pushes forward the boundaries of environmentally focused refrigeration and air conditioning systems. Their experience covers the entire range of industry sectors.

Established in Glasgow in 1970, Star has over 250 employees nationwide and provides fast response and 24-hour technical support from a network of nine branches to customers throughout the UK. Star is committed to the highest standards of staff development within the industry and is providing the opportunity for training / assessment / certification to nationally recognised standards through its 3 stage optional approach:

- online learning to provide underpinning knowledge
- practical assessment required for Certification
- theory assessment required for Certification

Assessment of the 2079 qualification will take place over the entire Star branch network;

Aberdeen – Bristol – Derby – Glasgow - Leeds – London- Manchester – Newcastle - Oxford

EKGTA

East Kilbride & District Engineering Group Training Association Ltd was established in 1966 as an employer led training provider for the Engineering Industry. It is a not for profit organisation with charitable status and it exists to provide businesses with a locally based training provision, committed to offering and delivering a wide range of training to nationally recognised standards, at realistic and competitive costs, as well as being a source for recruiting apprentice engineers.

EKGTA is an accredited centre through SEMTA, SQA, City & Guilds, ILM, Cogent SSC, AutoDesk, SQMS Scotland, Investor in People Scotland and Learndirect Scotland. EKGTA is the approved centre for the assessment and certification of the City & Guilds qualification 2079 Level 2 Award F-Gas Regulations.

3. Overview of the content of the online learning material**Objective**

To prepare candidates to undertake the online theory test required for certification in 2079 F-Gas Regulations

Structure

By the end of the course you will be able to:

- Describe the International System of Units (SI) applicable to the refrigeration industry.
- Explain reasonable operating temperature differences for condensers and evaporators.
- State the four stages of the basic vapour compression cycle, and describe their structure and function.
- Explain the relationship between pressure and temperature, and its effect on the heat transfer properties of a refrigerant.
- Explain how heat is transferred during the evaporation and condensation stages of the vapour compression cycle.
- Define the terms sensible heat, latent heat, subcooling and superheat.
- Explain how the phase change of zeotropic fluids is different to standard single substance or azeotropic blend refrigerants.
- Describe the characteristics of zeotropic refrigerants.
- Explain how key international Protocols and Regulations directly affect the refrigeration industry.
- Describe the functionality, advantages and disadvantages of components used in refrigeration/air conditioning systems.
- List the contents required in plant/system records.
- Describe the hazards associated with handling F Gas refrigerants.
- Explain the precautions to be adopted when handling different F Gas refrigerants.

4. Overview of N/SVQs

Vocational Qualifications recognises what a person is able to do at work, it includes:

- The skills and knowledge needed to do the job
- An ability to organise work
- Identifying and correcting problems before they occur

The qualifications are based on the assessment of competences in the workplace and this is carried out by registered assessors, it is offered at four different levels.

Competence

Competence is the ability to combine skill, knowledge and understanding to put it simply, candidates become competent as a result of training and experience in the job role to enable them.

- To perform and industrial role/function.
- Work under specific working conditions.
- To maintain the standards expected by that industry.

Competence can be demonstrated by collecting evidence.

Evidence

Evidence will amount to different things in different situations, but to summarise evidence will generally consist of:

- | | |
|---------------------------------|-------------------------------------|
| • Observations. | • Reports written by the candidate. |
| • Completed components. | • Log book entries. |
| • Answers to written questions. | • Witness statements. |
| • Answers to oral questions. | |

Assessors

The assessor's role is to view the evidence being presented and decides whether the candidate has achieved the level of competence required by.

- Planning the assessment process
- Briefing the candidate
- Reviewing the evidence presented
- Judging the evidence
- Give feedback to the candidate
- Recording the findings of the assessment

Verifiers

It is the verifier's responsibility to ensure the following has been adhered to.

- Check that the assessment process has been followed
- Determine the suitability of the evidence meets the criteria
- Quality control the assessment process
- Ensure consistency of the assessment for different candidates
- Provide feedback to the awarding body about the process and standards
- Support the assessor in their tasks

5. Practical Assessment of 2079 Qualification

Objective

Candidates must undertake and pass a practical assessment in leak checking, recovery, installation, service and maintenance of equipment with a charge of 3Kg (6Kg if hermetically sealed) or more, of fluorinated gases.

This will be conducted at a local branch of Star Refrigeration (9 branches throughout the UK)

Candidates are required to conduct leak checking, recovery, installation, service and maintenance of equipment with a charge of 3 kg. (6 kg if hermetically sealed), or more of fluorinated refrigerant.

Candidates must: Build a leak tight piping system in a refrigeration installation

- Fabricate and examine pipework
- Weld, braze and/ or solder leak free joints
- Make/ check pipe and components supports
- Undertake pressure testing, evacuation and record completion
- Undertake refrigerant charging, leak checking and record keeping
- Undertake recovery of refrigerant and oil and prepare for disposal

The assessment must be completed within a **4-hour** period. Failure to complete the practical assessment within four hours will result in an automatic fail.

6. Theory Assessment of 2079 Qualification

Objective

Candidates must undertake and pass an online multiple choice theory test required for certification in 2079 F-Gas Regulations

Will be conducted at a local branch of Star Refrigeration (9 branches throughout the UK)

Candidates are required to undertake an externally set and marked City & Guilds **online multiple-choice exam**. The exam consists of 11 sections with a total of 40 questions covering the following:

- Identify basic systems, terms, principles, units and how these relate to theory and thermodynamics of vapour compression cycles and refrigerants
- Identify the causes and effects of global warming and climate change
- Identify causes and effects of ozone depletion
- Identify stationary refrigerant, air conditioning and heat pump system components, functions and leakage risk
- Identify the hazards and safe working practices for the installation, commissioning and handling of refrigerants

The assessment must be completed within **1hr 20mins** period.

7. FAQs

What is the 2079 Level 2 Award in F – Gas Regulations?

This qualification is accredited by City & Guilds and is designed to enable refrigeration engineers to meet legal requirements in relation to the qualifications required to work with Fluorinated Greenhouse Gasses, otherwise known as F Gasses. The **F Gas Regulations** have been put in place by **DEFRA** to help EC countries meet the Kyoto protocol targets.

What is FG01/FG02 – F-Gas Regulations - Preparation Theory Course

This top quality distance-learning course on the **F-Gas Regulations** prepares you for individual certification to categories I and II of the award.

Who is the course aimed at?

Engineers working within the refrigeration industry who will require certification in categories I or II

What skills will I need to study the online course?

Whilst a reasonable level of literacy and comprehension skills are required, the materials are suitable for learners from a wide range of educational backgrounds. You only need to have basic computer skills to use the website e.g. typing in small amounts of text or moving and clicking on items with a mouse.

What topics does the online learning material cover?

- International System of Units
- Vapour Compression Cycle
- General characteristics of zeotropic blends
- Protocols and Regulations
- Ancillary components
- Maintaining records
- Refrigerant handling hazards

What equipment will I need for the online learning course?

You will need to be able to access a computer connected to the Internet. It will need speakers if you wish to listen to the audio although a text alternative is provided. You will also need an e-mail address for registration purposes.

Where will I undertake the learning?

Anywhere you can access a computer, which is connected to the Internet. This may be at home or in a library, or you may be able to join a group organised by your company.

Will help be available?

Yes, although you should be able to work through the course on your own. Should you require technical help or an explanation from a refrigeration expert you can contact [elearning-training.com](mailto:support@elearning-training.com)

How will I contact [elearning-training.com](mailto:support@elearning-training.com)?

You can contact us by phone or by e-mail at support@elearning-training.com

What practical experience should I have to undertake the City & Guilds Assessment?

Candidates should possess the appropriate knowledge and have sound practical refrigeration or air conditioning engineering experience.

Brazing and Pipework are part of the practical F-Gas Assessment for both Cat I & II and candidates with little or no experience of Oxy-Acetylene brazing would benefit by attending a relevant Pipework & Brazing course.

We recommend Gas Safe Consultants for Welding, Brazing and Oxy-fuel Gas Safety training and skills refreshment. Please check the link below for more information
http://www.gassafeconsultants.co.uk/industrial_workshop_overview.htm

The candidate should also be competent in the following skills:

- Oxygen Free Nitrogen (OFN) Pressure testing
- Gas Cylinder Handling
- Leak Detection Methods
- Refrigerant Identification
- Hazardous Waste
- Health and Safety

What will I have to do to obtain the qualification?

You will need to register and undertake specific assignments. One practical test, and one online multiple-choice exam. Both tests can be taken at a local branch of Star Refrigeration

Practical Test maximum 4 Hrs

Theory Test Maximum 1 hr 20 mins

What times of year are the online preparation course and C&G 2079 assessment available?

Once registered, you can access the online learning materials at any time during the day or night. When ready you can book both the assessment tests to be sat at your nearest branch of Star Refrigeration. Candidate's assessments will be undertaken weekly.

8. Feedback to learners

The results of the online test are available at time of submission of the test. Feedback is given to each candidate undertaking the formal assessments. The nominated Assessor gives this on an individual basis at the time of the practical assessment

9. Equal Opportunities

EKGTA as an approved City & Guilds Assessment Centre operates an equal opportunity policy. Throughout your period of assessment you will be treated fairly and reasonably regardless of sex, race or religion and in line with the publicised policy (A full copy can be obtained from the Centre Coordinator).

10. Appeals Procedure

EKGTA's appeals procedure is set out in the Company's policy document and follows the same process at all levels (A full copy can be obtained from the Centre Coordinator).

- If you have a grievance you must bring it to the attention of your Assessor.
- If you feel a satisfactory outcome has not been achieved you can raise the matter with the Internal Verifier.
- The next stage would be to request an interview with the Centre Coordinator.
- The final stage in the appeals process involves the matter being raised with the External Verifier; this meeting can be arranged through the Centre Coordinator.
- The person to whom the grievance was first reported is responsible for trying to resolve the issue within 7 working days. Paying due regard to confidentiality.

11. Re-sits

If you fail the City and Guilds 2079 theoretical assessment or practical assessment or both you will be required to re-sit the part you have not been successful in. Re-sits will be charged at the following rates:

C&G 2079 Theoretical Assessment: £75

C&G 2079 Practical Assessment: £175

Registration and Certification costs will not be charged.

12. Customer Support

If you have any questions about content within the online learning resource, you should contact Star Refrigeration on 0141 638 7916 or visit www.elearning-training.com

For information regarding assessment contact EKGTA on 01355 229985 or visit www.ekgta.com