

Apprenticeship standard (England only)

# Engineering Technician (Refrigeration Air Conditioning and Heat Pump)




Industry: **Engineering and Manufacturing Technologies**

City & Guilds code: **6090**

LARS number: **49**



A City & Guilds Group Business

-  **Typical duration: 36 months**
-  **Funding band: 12 (£18,000)\***
-  **Level 3**

\*Funding bands from May 2017.

**On-programme learning:** Registrations are now open  
**End-point assessment:** We are a registered EPA organisation –  
Reservations taken from Autumn 2017

Our Refrigeration Air Conditioning and Heat Pump (RACHP) Engineering Technician is for individuals new to working in the sector who want to be trained in the practical aspects of installing, commissioning, testing and maintaining refrigeration, air conditioning and heat pump systems and also learn the underpinning scientific and mathematical principles involved with vapour compression cycles and refrigerants. This will give engineering technicians the capability to work on a variety of different systems in a wide diversity of settings to the occupational standard set by employers.

The Department for Business, Energy & Industrial Strategy (BEIS) approved the RACHP Engineering Technician apprenticeship in September 2015 and is a direct replacement for the 7189 and 6187 qualifications SASE apprenticeship framework.

Developed to meet the needs of employers and designed with input from a trailblazer group including: Enigma Environmental Services Ltd, GEA Refrigeration, Integral UK Ltd, Mitsubishi Electric Living Environmental Systems, Star Refrigeration, Space Engineering Services, Carter Synergy, Adcock Refrigeration and Air conditioning, Epta Group, Sainsbury's, Daikin Airconditioning UK Ltd and the Institute of Refrigeration.

## City & Guilds – helping you with a tailored package

Our Digital Learning Resources Team has been working together with our well-established network of specialists, colleges and providers, to develop the right tools to support on- and off-the-job training.



### Qualification

Mandatory qualifications enhance on-programme learning.



### Learning Assistant

Tracks progress online in real-time.



### Guidance documents

Covering knowledge and advice on practical standards and behaviours.



### Apprentice Development Journal

Guides learners step-by-step through tasks that evidence the skills, knowledge and behaviours required.

Our exclusive support-package has been designed to keep your apprentices motivated and on track for successful end-point assessment.

For more information please visit [cityandguilds.com](http://cityandguilds.com)

# The City & Guilds Refrigeration Air Conditioning and Heat Pump Engineering Technician apprenticeship

The refrigeration air conditioning and heat pump engineering technician is a specialist occupation involved in planning, preparing and safely carrying out work activities in process, product and space cooling, refrigeration, air conditioning or heat pumping. The work is carried out in a variety of applications essential for key UK business activities such as: food production, product distribution, retail storage and display, transport and office climate control, manufacturing processes (eg petrochemical, pharmaceutical), IT/datacentres and medical/healthcare services temperature and environmental control.

## The apprentice journey



### 1. On-programme, on-the-job and off-the-job training

Training and development takes place during this part of the apprenticeship, which may include a qualification if it is identified as a requirement in the standard.

Formative assessment of skills, knowledge and behaviours is required in the delivery of the standard and this will be outlined in the assessment plan.

Maths and English are required (level varies according to the standard).

## 1. On-programme: What is required in the Assessment Plan?

The following aspects are covered in the assessment plan:

### Knowledge:

Legislation, regulations and standards, underpinning principles, data analysis, system fundamentals, sustainability. The 2079 F Gas is a mandatory qualification for this apprenticeship.

### Skills:

Safe working practices, control circuit application, mechanical operations, applications of mathematical principles, sustainable system operation.

### Behaviours:

Safety approach, strong work ethic, logical problem solver, focus on quality, personal responsibility, communicates well, adaptable, self-motivated.

### Recommended assessment method:

Assessments to test knowledge that are set and marked independently of the training organisation (eg online multiple choice).

Short assignments are set independently by an awarding organisation and assessed by the training organisation (eg observed workshop projects and written test projects), to test practical skills including electrical, pipefitting, health and safety, installation, and service/maintenance.

## How our offer supports on-programme delivery



### Mandatory qualification

The 6090 at Levels 2 and 3 are closely aligned to the content of the apprenticeship standard and enhance the on-programme learning for the apprentice. The 2079 F Gas is a mandatory qualification for this apprenticeship.



### Apprentice development journal

Available in print and as part of our e-portfolio, the Refrigeration Air Conditioning and Heat Pump Engineering apprentice development journal guides learners step-by-step through tasks that evidence the skills, knowledge and behaviours required.



### Learning Assistant

Learning Assistant is an innovative and cost effective e-portfolio solution that allows colleges and training providers to improve dramatically the delivery of their vocational qualification by tracking progress online in real time.



### Guidance documents

- The qualification handbooks contain all of the skills and knowledge with learning guidance.
- Qualification handbook.

## Maths and English requirements

If your apprentices need to complete maths and English, our popular Functional Skills qualifications fit within apprenticeship programmes and cover the core maths and English requirement for the workplace and further study. We have an extensive support package available, including e-Functional Skills, and an online teaching and learning platform, which guides learners from an initial and a diagnostic assessment, through to being exam ready.

Find out more: [cityandguilds.com/functionalskills](https://www.cityandguilds.com/functionalskills)

## 2. Gateway

The employer and provider must sign-off the apprentice as ready to move on to end-point assessment.

## 3. End-point assessment

The end-point assessment must demonstrate that the apprentice can perform in the occupation in a fully competent, holistic and productive way.

**The assessment will be graded if required by the standard.**

**The assessment organisation and assessor must be independent of, and separate from, the training provided by the provider and employer.**

## 4. Apprenticeship certification

On successful completion, the end-point assessment organisation will apply to the ESFA for the apprenticeship certification. The certificate will then be sent to the apprentice's employer.

## 2. Gateway

Achieve an individual F Gas Certification (Category 1), which is a mandatory qualification. This must be achieved before the final end-point assessment is undertaken. The F Gas Certification comprises a practical and knowledge test on elements related to environmental impact of RACHP work.

Candidates must complete their apprentice development journal, signed off by the training organisation and employer, before they take the practical and theory elements of the end-point assessment.

## 3. End-point assessment

Synoptic end-point knowledge exam, in the form of a online multiple choice exam, covering the complete range of the apprenticeship standard.

A practical project carried out over two to three days under one-to-one supervision of a training organisation, with activity documented, and recorded by the training organisation against the standard.

## End-point assessment methods

The first three elements of the assessment can be completed in any order, but must be completed before the professional discussion.



### Synoptic Knowledge Test

Online test covering all learning aspects of the apprenticeship. Results will be graded pass (60-75%), merit (76-85%), distinction (86-100%).



### Synoptic Skills Test

A project carried out under assessment conditions over 2-3 days and is documented by the training organisations.



### Logbook

Evidence gathered from workplace experience to demonstrate behaviours mapped to the standard and satisfying engineering technician requirements. This will be graded pass, merit or distinction.



## 4. Apprenticeship certificate

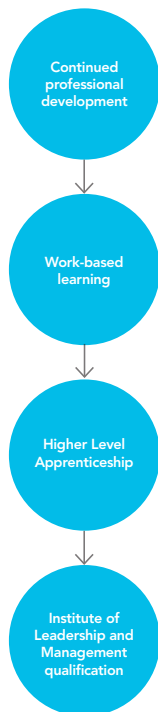
As well as receiving their ESFA apprenticeship certification, the apprentice will receive a City & Guilds statement of achievement for end-point assessment.

# Apprenticeships are changing. Our commitment to you never will.

## Progression in the engineering services industry with City & Guilds

This apprenticeship is part of our wider offering in the engineering sector. We provide the following apprenticeship opportunities.

Post-apprenticeship



## Our commitment to you

Complementing our support materials for the engineering industry, at City & Guilds we're dedicated to supporting your wider apprenticeship strategy, with a range of events and free webinars run by industry experts to advise and guide you. Our consultancy team runs free-to-fee options to help you prepare for apprenticeship delivery and to understand the new standards and funding.

## Information about events, webinars and consultancy support is online:

[cityandguilds.com/apprenticeships](http://cityandguilds.com/apprenticeships)

## How our offer supports you

### Technical support

Our Industry Manager and Independent End Assessors are always on hand to answer any questions you might have about end-point assessment.

### Customer Services Team

Our dedicated Business Managers and Customer Support Team are here to support you and your learners throughout all aspects of apprenticeships from registration to completion.



### More information

Visit Walled Garden to find out prices and if any elements are extra to the package. Please contact your Business Manager or [apprenticeships@cityandguilds.com](mailto:apprenticeships@cityandguilds.com) for further information.