

# Level 3 End-Point Assessment for Gas Engineering Operative



## EPA Specification Section 5.1 – The Knowledge Assessment

- Criteria
- Grading

### Contacts

This specification has been designed to provide all the advice and guidance you need to prepare yourself and your apprentices for end-point assessment. However, if you have any further questions please contact the EUIAS Help Desk using one of the following:

Help Desk email: [enquiries@euias.co.uk](mailto:enquiries@euias.co.uk)

Help Desk telephone: 0121 0779922 option 2

## Introduction

The knowledge assessment consists of 40 multiple choice questions sampling the core knowledge (listed below as CK1, CK3, CK4 and CK7) of the GEO standard. The practice test supplied as part of this document illustrates the format and style of the assessment.

### Preparing for the Knowledge Assessment

- While on-programme, the employer or training provider should ensure the apprentice is familiar with all areas assessed by the knowledge assessment
- The employer or training provider should support the apprentice to complete a practice test and provide them with formative feedback to enable them identify areas of further learning

### Knowledge Assessment Criteria

The criteria that are covered in the Knowledge Assessment are listed below. In each assessment, questions will cover each of the areas; not every aspect of every area will be covered in every assessment. Bold font indicates that Amplification and Guidance is provided below.

**CK1** Current Health, Safety and Environmental legislation and regulations applicable to work in the gas industry

**CK3** Gas and electrical theories and procedures involved in the practical installation, commissioning, decommissioning and or ongoing service and repair of gas installations, appliances and associated equipment

**CK4** Relevant electrical, mechanical principles and how they are applied in work processes and procedures

**CK7** Current regulatory compliance, current Gas Safety (Installation and Use) Regulations and the current Electricity at Work Regulations

## Knowledge Assessment Amplification and Guidance

### Core Knowledge (CK) criteria

#### **CK1 Current Health, Safety and Environmental Legislation and Regulations**

- Health & Safety at Work Act
- Control of Substances Hazardous to Health procedures
- Working at Height Regulations
- Provision and Use of Work Equipment Regulations (PUWER)
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
- Building Regulations (England & Wales)
- Building Standards (Scotland)

### **CK3 Gas and electrical theories and procedures involved in the practical installation, commissioning, decommissioning and/or ongoing service and repair of gas installations, appliances and associated equipment**

- Correct practical application of the scientific principles aligned to the safe installation, commissioning, decommissioning and / or ongoing service and repair of gas installations and associated equipment. i.e. properties of gas,
- Ability to follow processes as outlined in manufacturer's instructions
- Correct interpretation of flame picture, and recording of Working Pressure across the appliance range / pathway
- The correct ventilation criteria is / are applied to each appliance / installation relevant to the situation as found or as described
- Safe isolation of electrics procedures is / are applied
- Electrical systems are deemed safe through the proper completion of preliminary electrical systems checks
- The correct process for earth loop impedance testing is applied

### **CK4 Relevant electrical/mechanical principles and how they are applied in work processes and procedures**

- Demonstration of understanding of the operation of electrical and mechanical systems / components, and how these are applied within appliances or control-systems
- Understanding and application of safe working processes / procedures / practices when dealing with electrical / mechanical equipment / controls / systems / functions

## **Technical Knowledge (TK) criteria**

### **TK1 Electrical awareness and be able to carry out safe isolation and essential electrical safety checks**

- Records of candidates following the safe isolation process and carrying out the correct electrical safety checks will be present throughout worklog
- Knowledge test will include questions on safe isolation / electrical safety checks

### **TK2 Combustion, combustion analysis, gas properties, carbon monoxide (CO), and types of burners**

- Worklog will include evidence of combustion performance and analysis.
- Worklog will also show occasions where carbon monoxide has been detected and the correct actions followed
- Knowledge test will include questions from the list of combustion / combustion analysis / gas properties / carbon monoxide / types of burners

### **TK3 Flues and ventilation principles**

- Worklog will contain examples of flue / chimney considerations against relevant standards, including flue route, material, termination, sizing and testing methods
- Worklog will contain examples of ventilation calculations and confirmation of ventilation provisions for a range of appliance types and situations
- Knowledge test will contain questions on flue and ventilation principles

### **TK4 The necessary safety checks following gas work on an appliance (regulation 26/9)**

- Worklog will contain examples of compliance with the requirements set out in Gas Safety (Installation & Use) Regulation 26 (9):

“Where a person performs work on a gas appliance, he/she shall immediately thereafter examine -

- (a) the effectiveness of any flue;
- (b) the supply of combustion air;
- (c) its operating pressure or heat input or, where necessary, both;
- (d) its operation so as to ensure its safe functioning”

- Knowledge test will also contain questions related to Gas Safety (Installation & Use) Regulation 26(9)

### **TK5 The range and suitability of appliances**

- Worklog will contain confirmation of the suitability of appliances / appliance installation in reference to the requirements of manufacturer's instructions and other normative documents
- Knowledge test questions on the range and suitability of appliances

#### **TK6 The statutory and normative documentation including building regulations, water regulations and electrical regulations**

- Worklog evidence will show interpretation of regulations and standards has occurred throughout the programme
- Knowledge test will also cover statutory and normative documentation

#### **TK7 Emergency procedures, including gas escapes, report of fumes and for unsafe situations**

- Worklog evidence to show the application of the appropriate emergency actions and procedures that apply to each situation where unsafe circumstances were encountered (Whether 'At Risk,' 'Immediately dangerous,' or 'RIDDOR')
- Knowledge test will contain question relating to specific unsafe situation circumstances and procedures to be followed

#### **TK8 A knowledge and understanding of four appliances**

- Worklog evidence outlining work activities across the stated range of (four) appliance types that consist of the chosen pathway for apprenticeship
- Knowledge test questions relating to appliances

#### **TK9 System design, location, controls, flue types for appliances and smart controls**

- Checks that all designs, locations, control systems etc meet the requirements of Manufacturer's Instructions are included within worklog evidence
- Knowledge test questions relating to system design / flue types and controls

#### **TK10 An awareness of green technologies**

- Worklog evidence of customer conversations where suitable green technology advice has been stated
- Knowledge test questions relating to green technologies

#### **TK11 The properties of Liquid Petroleum Gas (LPG)**

#### **TK12 An awareness of fuel storage – tanks and bottles (Liquid Petroleum Gas - LPG)**

- Worklog containing evidence of LPG awareness / tank and bottle storage considerations
- Knowledge test questions on LPG awareness

In accordance with the GEO assessment plan, aspects of these elements are also assessed in the Worklog review Assessment.

### Knowledge Assessment Grading

This component is graded as follows:

Grade:	Percentage:
Fail	≤79
Pass	80 – 89
Distinction	90 -100