
Overview

This standard covers carrying out system and electrical diagnostic operations in the gas sector. This work must be in accordance with the current versions of the appropriate industry standards and regulations; the specification; industry recognised working practices; the working environment and the natural environment.

To meet this standard you will be able to:

- identify various types of heating and hot water systems
- communicate with customers to help in the identification of faults
- use fault finding procedures and carry out system diagnostics to rectify faults
- take personal responsibility for your own actions and for the quality and accuracy of the work carried out.

This standard is suitable for a craftsperson or technician working independently in the gas energy supply and use sector.

Performance criteria

You must be able to:

1. identify the work area to be accessed using organisational documentation, systems and work instructions
2. select, inspect and wear relevant personal protective equipment for completing work activities in line with organisational procedures
3. carry out a site specific risk assessment of the work, identifying hazards and the required control measures
4. apply the control measures necessary to meet safety requirements for the work activity
5. carry out a pre-use inspection of the tools and equipment to be used, checking condition and service information in accordance with organisational procedures
6. record and report results of the operation in accordance with organisational procedures
7. identify various heating and hot water system types
8. identify the **parts** of the heating hot water system
9. carry out system tests and checks to confirm functionality
10. identify the causes of loss of system function and rectify system faults
11. identify and rectify electrical system faults
12. store tools and equipment safely and securely, leaving the work area in a safe condition in accordance with organisational procedures

Knowledge and understanding

You need to know and understand:

1. the principles of health and safety in the workplace, environmental legislation and relevant regulations in relation to the work to be carried out
2. the organisations reporting lines, authorisation roles and responsibilities
3. the organisational safety rules, policies and procedures in relation to working with gas
4. how to carry out a site risk assessment, identify hazards and assess risks of the site and proposed activity
5. how to select, inspect and use personal protective equipment
6. how to update, report and record information in accordance with organisational procedures
7. how to respond to the different types and categories of emergency situations that might occur
8. how to maintain safe working and environmental practices throughout the duration of the work minimising the risks to self and others
9. the principles of Domestic Hot Water Service systems
10. the principles of heating and hot water system layouts
11. how to complete pump sizing and confirm it's operating correctly
12. how to identify that pipe sizing of gas, heating, hot and cold water systems are correct
13. the principles and parts, including their function, of open vented systems
14. the principles and parts, including their function and advantages of sealed systems
15. the principles of heating and domestic hot water system controls, the tests and checks that need to be carried out to confirm they are working correctly
16. the electrical tests and checks that need to be carried out to confirm system parts are working correctly
17. how to identify appliance faults
18. how to exchange system parts on both heating and hot water system and confirm their correct and safe function
19. how to leave the work area secure and the importance of doing so

Scope/range

The Range to be covered in the Performance Criteria

identify all the **parts** of the heating hot water system:

- Boiler
- Cylinder
- Programmer
- Cylinder stat
- Room stat
- Pump
- Header tanks
- Expansion vessel
- Pressure gauge
- Fill loop
- Zone Valves

Developed by	Energy & Utility Skills
Version Number	1
Date Approved	22 Feb 2017
Indicative Review Date	30 Mar 2021
Validity	Current
Status	Original
Originating Organisation	Energy and Utility Skills
Original URN	new
Relevant Occupations	Domestic Heating Systems Installer, Gas Appliances Installer, Gas Team Leaders, Craftspersons and Technicians, Gas Engineer
Suite	Down Stream Gas
Keywords	gas, domestic, fault finding, electrical diagnosis