

## Maintain domestic gas space heating appliances

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### Overview

This national occupational standard is for gas engineers who are required to maintain domestic gas space heating appliances and includes both Fires and Wall Heaters. This standard covers the work activities of planning, maintaining, de-commissioning and commissioning those appliances.

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### Performance criteria

- You must be able to:*
- Plan and prepare work activities for maintaining domestic gas fires and wall heaters
  - 1. Produce a risk assessment and method statement which incorporates safety provisions in the work site, access to the work site, movement of the workforce, members of the public, and the movement and safe storage of materials, tools and equipment for the job
  - 2. Survey the work site for any pre-maintenance damage or defects to existing building features and record it
  - 3. Advise the property occupier of any defects found and agree the planned work
  - 4. Protect the work site and the building fabric against possible damage being caused during the de-commissioning and maintenance process
  - 5. Check and confirm all materials, tools and equipment necessary for the de-commissioning, maintenance and commissioning process are available as required and are fit for purpose
  - 6. Check and confirm that the siting of the appliance meets the manufacturers' and industry standards' requirements for location, siting and clearances
  - 7. Confirm that the gas supply, electricity supply, the chimney suitability and the provision of ventilation meet the appliance manufacturers' and industry standards' requirements for the installation
  - 8. Carry out all necessary checks and tests to confirm the gas supply, electricity supply and the chimney system meet the manufacturers' and industry requirements for the installation
  - 9. Check existing installation for any unsafe appliances and system components and apply the gas industry unsafe situations procedures as required
- De-commission domestic gas fires and wall heaters to industry standards
- 10. Check that conditions within the gas and electricity systems will permit safe de-commissioning
  - 11. Select and use the correct tools and equipment for de-commissioning activities
  - 12. Use designated safe isolation methods, tests, and procedures to de-commission gas and electricity systems and components
  - 13. Take precautionary actions to ensure that temporarily de-commissioned appliances, systems, or components do not present a safety hazard
  - 14. Permanently remove and disconnect appliances, gas system

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components and electricity system components as required

Maintain domestic gas fires and wall heaters to industry standards

15. Carry out preparatory work to meet the maintenance requirements set out in the plan
16. Remove existing gas and electricity system components as required by the maintenance activities
17. Carry out the maintenance process in accordance with manufacturers' specification and industry standards
18. Carry out the maintenance process minimising damage to customer property and building features
19. Select and use the correct tools and equipment for maintenance work activities
20. Re-position the appliance and confirm it meets the location, siting and clearances required by the manufacturers' and industry standards' specification
21. Confirm existing ventilation for appliances and system meets industry requirements for the installation
22. Ensure existing gas systems are clean and free of debris
23. Re-connect gas and electricity system components to the appliance
24. Use tightness testing and purging procedures to confirm the integrity of the re-connected gas system and appliance
25. Use electrical testing procedures to confirm the integrity of the re-installed electrical system and appliance
26. Use industry standard checks and testing procedures to confirm the integrity of the existing chimney system and appliance flue seals

Pre-commission and Commission domestic gas fires and wall heaters to industry standards

27. Confirm the complete appliance installation complies with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations
28. Check that conditions within the gas and electricity systems will permit safe commissioning
29. Select and use the correct tools and equipment for commissioning

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activities

30. Check and confirm the:

- a) gas system operating pressures meet industry standards
- b) appliance operating pressure and the gas rate meet industry standards' and manufacturers' requirements

31. Check the combustion performance visually and by flue gas analysis as required

32. Test chimney performance and reconfirm it performs according to manufacturers' and industry standards' requirement's

33. Reconfirm that the ventilation requirements meet industry standards for the installation

34. Check and confirm the operation of the gas appliance, the gas system and components to ensure they function safely and operate in accordance with manufacturers' instructions

35. Check and confirm the electrical system and components function safely and operate in accordance with the manufacturers' instructions

36. Instruct the property occupier on the correct operation of the appliance and gas system and provide them with their copy of the appliance literature

37. Take precautionary actions to prevent the unauthorised use of un-commissioned gas appliances, gas systems, electrical systems and components by isolation procedures and use of warning notices

Use and communicate data and information to carry out de-commissioning, maintenance and commissioning work

38. Liaise with the property occupier and other people who will be affected by the work during the planning, de-commissioning, installation, and commissioning processes to minimise disturbance to the job

39. Use normative documents, industry standards, British Standards and information from manufacturers' instructions for the appliance to ensure the work is done to the specification

40. Advise of any delays to the work, unsafe situations and required remedial actions to those who require the information

41. Check that the customer is satisfied with the finished job

42. Complete records and documentation confirming the safe maintenance of gas appliances, systems and components

43. Complete gas appliance and gas system commissioning and de-commissioning records as required and ensure they are stored securely

Resolve problems within own area of responsibility and competence

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which could affect the de-commissioning, maintenance and commissioning process

44. Rectify problems within own area of responsibility and competence and report deficiencies in gas and electric input services

45. Resolve problems in accordance with approved procedures when:  
a) pre-maintenance checks and tests reveal gas appliance, gas system or component defects

b) gas appliances, gas systems and components being commissioned do not meet design requirements

c) the gas appliance, the gas system or component cannot be restored to full performance

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### Knowledge and understanding

*You need to know and understand:* General Knowledge

1. Regulations and guidance governing health and safety in the workplace, environmental protection and the use of risk assessments
2. Legislation covering the general responsibilities of the operative for their own safety and that of others
3. The limits of your own autonomy and responsibility

De-commissioning, maintaining and commissioning domestic gas space heating appliances

4. The health, safety and environmental factors which need to be incorporated in risk assessment for the domestic maintenance process
5. Safe access and working at heights
6. The tools and equipment necessary to provide safe access to work at heights, or in confined spaces
7. The methods of working which protect the building décor, customer property and existing systems and components
8. The care and maintenance requirements of tools and equipment, and checks for safe condition
9. The tools, equipment, materials and components required for the gas appliance and gas system de-commissioning, maintenance and commissioning – ordering, supplying, advising, checking and delivery procedures
10. How to safely secure and store tools, equipment, materials and components to minimise loss or wastage
11. The potential hazards that could arise from all de-commissioning, maintenance and commissioning activities and the checks to be carried out before work takes place
12. The steps to take should materials, components, tools and equipment not be available at the site to commence the de-commissioning, maintenance and commissioning activity
13. How to access and correctly interpret the required information, including normative documents, industry standards guidance documents, British Standards and manufacturers' instructions applicable to the appliance, to ensure the work is done to the specification and industry standards
14. How to confirm that the services and systems requirements are adequate for existing gas appliances, systems, or components
15. Safe isolation methods, tests, and procedures to de-commission gas and electricity systems or components

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16. The procedures for temporary and permanent de-commissioning of appliances and systems including use of temporary continuity bonds
17. The precautions to ensure that de-commissioned appliances or systems do not prove a safety hazard
18. Measures to prevent de-commissioned appliances or systems being brought into operation utilising safety and warning notices
19. The need to liaise with others whose procedures or routines may be affected by the suspension of the gas appliance and gas system operation
20. The points in the de-commissioning, maintenance and re-commissioning process where co-operation and liaison with other trades and property occupier may be required
21. The industry practices and work standards for fabricating and installing domestic gas fires, wall heaters, gas systems and components to comply with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations
22. The positioning and fixing requirements for domestic gas fires, wall heaters, gas systems and components to comply with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations
23. The procedures and work methods for connecting:
  - a) to input services including; gas, electric, ventilation and chimney systems
  - b) domestic gas fires, wall heaters and components to both new and existing gas, electric, ventilation and chimney systems
24. The process and procedures, equipment and legislative requirements for applying tightness testing and purging and electrical testing to appliances, systems and components to ensure safe functioning
25. The routines and sequences for:
  - a) the maintenance process of domestic gas fires, wall heaters, gas systems and components in accordance with manufacturers' specification and industry standards
  - b) re-commissioning domestic gas fires, wall heaters, gas systems and components in accordance with manufacturers' specification and industry standards
26. The procedures for checking:
  - a) the correct operation and performance of domestic gas fires, wall heaters, gas systems and components and checking against the design

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specification

b) the correct operation and performance of domestic gas fires, wall heaters, gas systems and components to ensure safe functioning

c) and confirming the gas system operating pressures

d) and confirming the appliance operating pressure and the gas rate

27. The tests, checks and use of flue gas analysers which confirm the suitability of the gas combustion performance

28. The tests and checks to confirm the integrity, suitability and performance of the systems

29. How to complete all maintenance documentation and records to be left with the property Measures to prevent un-commissioned gas appliances and gas systems being brought into operation utilising safety and warning notices

30. The system handover procedures and demonstrating the operation of replacement domestic gas fires, wall heaters, gas systems and components to end users

31. The steps to take when problems arise in the work activities

32. Job management structures and methods of reporting and recording job progress or problems delaying progress

33. How to safely collect and dispose of system contents that may be hazardous to health or the environment

34. How to isolate unsafe gas appliances, gas systems and components and application of the gas industry unsafe situations procedure



## Glossary

“Cookers” refers to Freestanding, Built In, Slide Under, Hotplates, Grilles, Range Cookers, and Dual Fuel Cookers

“Leisure Appliances” refers to Greenhouse Heaters, BBQ’s, Patio Heaters, Gas Flambeaux, and Outdoor Gas Lighting

“Fires” refers to Outset Gas Fires, ILFE’s, DFE’s, Flueless, Direct Flue Fires, Heating Stoves, and Condensing Gas Fires. These will include Open, Room-Sealed, and Fanned Draught Chimneys

“Wall Heaters” refers to Room-Sealed and Flueless Convective Heaters.

“Work Site” refers to the area where the work will take place and all areas affected by the works

‘Services and Systems’ refers to water, central heating, gas, electricity supply, condensate disposal, chimneys and ventilation systems

## Maintain domestic gas space heating appliances

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