

## Install domestic gas space heating appliances

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### Overview

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

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### Performance criteria

- You must be able to:*
- Plan and prepare work activities for installing domestic gas fires and wall heater
  - 1. Identify, record and agree the customer's job requirements in line with statutory and industry requirements
  - 2. Survey the work site and consult site diagrams as necessary for any key structural features and existing defects that could affect the installation and record them, advising property occupier of any defects found
  - 3. Check that the proposed siting of the appliance meets the manufacturers' and industry standards' requirements for location, siting and clearance
  - 4. Check size, location and availability of all necessary input services meet the appliance manufacturers' and industry standards' requirements for the installation including services and systems
  - 5. Check and ensure the design of the proposed installation is in compliance with industry standards
  - 6. 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
  - 7. Protect the work site and the building fabric against possible damage being caused during the de-commissioning and installation process
  - 8. Check and confirm all materials, tools and equipment necessary for the de-commissioning, installation and commissioning process are available as required and are fit for purpose
  - 9. Confirm that the services and systems suitability meet the appliance manufacturers' and industry standards' requirements for the installation
  - 10. 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 and manufacturers' instructions

- 11. Check that conditions within the gas and electricity systems will permit safe de-commissioning
- 12. Select and use the correct tools and equipment for de-commissioning activities
- 13. Use designated safe isolation methods, tests, and procedures to de-commission gas and electricity systems and components
- 14. Take precautionary actions to ensure that temporarily de-

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commissioned appliances, systems, or components do not present a safety hazard

15. Permanently remove and disconnect appliances, gas system components and electricity system components as required

Install, Exchange, and Remove domestic gas fires and wall heaters to industry standards and manufacturers' instructions

16. Carry out preparatory work to meet the manufacturers' installation requirements

17. Carry out the installation process minimising damage to customer property and building features

18. Select and use the correct tools and equipment for installation activities

19. Remove existing gas and electricity system components as required by the installation

20. Fabricate gas and electricity system components as required by the installation

21. Position the appliance and confirm it meets the location, siting and clearances required by the manufacturers' and industry standards' specification

22. Provide the required ventilation for new or replacement appliance installations and systems

23. Ensure existing gas systems are clean and free of debris

24. Fix and connect gas and electricity system components to the appliance

25. Use safe tightness testing and purging and electrical testing procedures to confirm the integrity of the installed system and appliance

26. Use industry standard checks and testing procedures to confirm the integrity of the newly installed or existing chimney system and appliance flue seals

27. 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

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

28. Confirm the complete appliance installation complies with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building

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### Regulations

29. Check that conditions within the gas and electricity systems will permit safe commissioning
30. Select and use the correct tools and equipment for commissioning activities
31. Check and confirm the gas system operating pressures meet industry standards
32. Check and confirm the appliance operating pressure and the gas rate meet industry standards' and manufacturers' requirements
33. Check the combustion performance visually and by flue gas analysis as required
34. Test chimney performance and reconfirm it performs according to manufacturers' and industry standards' requirements
35. Reconfirm that the ventilation requirements meet industry standards for the installation
36. 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
37. Check and confirm the electrical system and components function safely and operate in accordance with the manufacturers' instructions
38. Instruct the property occupier on the correct operation of the appliance and gas system and provide them with their copy of the appliance literature

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

39. 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
40. Use normative documents, industry standards, British Standards and information from manufacturers' instructions for the appliance to ensure the work is done to the specification
41. Advise of any delays to the work, unsafe situations and required remedial actions to those who require the information
42. Check that the customer is satisfied with the finished job
43. Complete records and documentation confirming the safe commissioning of gas appliances, systems and components
44. Complete gas appliance and system de-commissioning records
45. Submit details of installation and exchange appliance(s) to the Gas Work Notification Scheme

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Resolve problems within own area of responsibility and competence which could affect the de-commissioning, installation and commissioning process

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

47. Resolve problems in accordance with approved procedures when:

a) pre-commissioning checks and tests reveal gas system or component defects

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

c) the gas appliance, the gas system and components 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 other
3. The limits of your own autonomy and responsibility

De-commissioning, Installing 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 installation process
5. The tools and equipment necessary to provide safe access to work at heights, or in confined spaces
6. The methods of working which protect the building décor, customer property and existing systems and components
7. The care and maintenance requirements of tools and equipment, and checks for safe condition
8. The tools, equipment, materials and components required for the gas appliance and gas system de-commission, installation and commission including ordering, supplying, advising, checking and delivery procedures
9. How to safely secure and store tools, equipment, materials and components to minimise loss or wastage
10. The potential hazards that could arise from all de-commissioning, installation and commissioning activities and the checks to be carried out before work takes place
11. The steps to take should materials, components, tools and equipment not be available at the site to commence the de-commissioning, installation and commissioning activity
12. 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
13. How to measure and record installation and site details for prefabrication purposes
14. How to confirm that the services and system requirements are adequate for installation of the new gas appliance, gas system and components

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15. How to confirm that the service and system requirements are adequate for extending the system or adding components to
16. Safe isolation methods, tests, and procedures to de-commission gas and electricity systems or components
17. The procedures for safe temporary and permanent de-commissioning of appliances and systems including use of temporary continuity bonds
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, installation and 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 and positioning and fixing 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 procedures and work methods for connecting:
  - a) to input services including; gas, electric, ventilation and chimney systems
  23. b) domestic gas fires, wall heaters and components to both new and existing gas, electric, ventilation and chimney systems
24. The safe 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 commissioning domestic gas fires, wall heaters, gas systems and components in accordance with manufacturers' specification and industry standards
26. The procedures for checking the correct operation and performance of domestic gas fires, wall heaters, gas systems and components and checking against the design specification
27. The procedures for checking the correct operation and performance of domestic gas fires, wall heaters, gas systems and components to ensure safe functioning
28. The procedures for checking and confirming the:
  - a) gas system operating pressures
  29. b) appliance operating pressure and the gas rate

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30. The tests, checks and use of flue gas analysers which confirm the suitability of the gas combustion performance
31. The tests and checks to confirm the integrity, suitability and performance of the systems
32. How to complete all installation and commissioning 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
33. The system handover procedures and demonstrating the operation of domestic gas fires, wall heaters, gas systems and components to end users
34. The steps to take when problems arise in the work activities
35. Job management structures and methods of reporting and recording job progress or problems delaying progress
36. How to safely collect and dispose of system contents that may be hazardous to health or the environment
37. How to isolate unsafe gas appliances, gas systems and components and application of the gas industry unsafe situations procedure



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### 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 Convector 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

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