

Install gas pipework up to 35mm

Overview

This national occupational standard is for gas engineers who are required to install, exchange and remove gas pipework up to 35mm in line with current British Standards. This standard covers the work activities of planning, installing, exchanging, disconnecting, de-commissioning and commissioning gas pipework up to 35mm.

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Performance criteria

- You must be able to:*
- Plan and prepare work activities for gas pipework up to 35mm
 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
 5. 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
 6. Protect the work site and the building fabric against possible damage being caused during the de-commissioning and installation process
 7. 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
 8. Confirm that the services and systems suitability meet the appliance manufacturers' and industry standards' 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 gas pipework up to 35mm to industry standards and manufacturers' instructions

1. Check that conditions within the gas and earthing systems will permit safe de-commissioning
2. Select and use the correct tools and equipment for de-commissioning activities
3. Use designated safe isolation methods, tests, and procedures to de-commission gas and earthing systems and components
4. Take precautionary actions to ensure that temporarily de-commissioned appliances, systems, or components do not present a safety hazard
5. Permanently remove and disconnect appliances, gas system

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components and earthing system components as required

6. After permanent removal of pipework mark any live gas pipes with a notice to indicate the pipe contains gas

Install, exchange, and remove gas pipework up to 35mm to industry standards and manufacturers' instructions

7. Carry out preparatory work to meet the installation requirements

8. Carry out the installation processes minimising damage

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

10. Remove existing gas and earthing system components as required by the installation plan

11. Fabricate gas system, fittings and components as required by the installation plan

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

13. Provide adequate ventilation for new or replacement pipework installations and systems as necessary

14. Provide adequate support(s) for pipework installation to conform with industry standards' specification

15. Position and protect pipework installation in and through walls and in multi-occupancy dwellings to meet industry standards for sleeving and purpose designed channels and shafts

16. Position and protect external installations to meet industry standards and requirements including protection against mechanical damage, minimum depth below ground level installations.

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

18. Fix and connect gas pipework, valves, fittings and components to the supply

19. Mark any live gas pipes with a notice to indicate the pipe contains gas

20. Install additional emergency control valve (AECV) to the supply as necessary e.g. remote meter installations

21. Connect earthing system components to the supply as necessary

Pre-commission and Commission gas pipework up to 35mm to industry standards and manufacturers' instructions

22. Confirm the complete pipework installation complies with the manufacturers' specification, industry standards, Gas Safety

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(Installation & Use) Regulations, British Standards and Building Regulations

23. Check that conditions within the gas system will permit safe commissioning

24. Select and use the correct tools and equipment for commissioning activities

25. Use tightness testing and purging procedures to confirm the integrity of the installed gas system and, where applicable, existing appliance(s)

26. Use purging procedures to confirm the safe supply of gas to the installed gas system

27. Use electrical testing procedures to confirm the integrity of the installed earthing system as necessary

28. Apply protective coating to pipework as necessary and to joints after gas tightness testing has been completed.

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

30. Check and confirm the operation of the installed gas valves and components to ensure they function safely and operate in accordance with manufacturers' instructions

31. Instruct the property occupier on the correct operation of the gas system, valves and components and provide them with their copy of any literature

32. 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, installation and commissioning work

33. 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

34. Use normative documents, industry standards, British Standards and information from manufacturers' instructions applicable to the gas system and the appliance to ensure the work is done to the specification

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

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

37. Complete records and documentation confirming the safe

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commissioning of gas systems and components

38. Complete gas system de-commissioning records

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

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

40. Resolve problems in accordance with approved procedures where

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

b) gas systems and components being commissioned do not meet design requirement

c) 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 others
3. The limits of your own autonomy and responsibility

De-commissioning, Installing and commissioning gas pipework up to 35mm

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 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 gas supply and earthing system requirements are adequate for the installation of the new gas system and components or, for extending the system or adding components to

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15. How to confirm that the provision of ventilation meets the industry standards' requirements for the installation including in voids, shafts and ducts,
16. How to calculate correct sizing of pipework to ensure minimum pressure loss across installation
17. Checks and tests to confirm suitability of the gas supply and the earthing system, including the installation and positioning of the main equipotential bonding
18. Safe isolation methods, tests, and procedures for temporary and permanent de-commissioning of gas systems, earthing systems and components, including the use of temporary continuity bonds
19. The precautions to ensure that de-commissioned gas and earthing systems do not prove a safety hazard
20. Measures to prevent de-commissioned gas systems being brought into operation utilising safety and warning notices
21. The need to liaise with others whose procedures or routines may be affected by the suspension of the gas system operation
22. The points in the de-commissioning, installation and commissioning process where co-operation and liaison with other trades and property occupier may be required
23. The industry practices and work standards for fabricating and installing gas pipework, valves, systems and components to comply with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations
24. The types of pipe materials and fittings suitable for carrying gas
25. The industry practices, work standards and safety precautions for jointing materials and fittings suitable for carrying gas, including connecting to lead composition pipes, including COSHH requirements
26. The industry practices and methods of bending pipe materials suitable for carrying gas and copper pipework to set measured distances to include;
 - a) double sets/offset bends
 - b) 90 degree bends
 - c) crank sets/passover bends
27. The positioning and fixing requirements for gas pipework, valves, systems and components to comply with the manufacturers' specification, industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations
28. Installation of gas pipework to ensure it meets the industry standards' requirements for; location, siting, clearance requirements

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and relationship to other services

29. The industry practices and work standards of providing adequate support(s) for pipework installation to conform with industry standards' requirements

30. The positioning, protection and fixing methods for gas pipework, valves, systems and components to comply with industry standards, Gas Safety (Installation & Use) Regulations, British Standards and Building Regulations in:

- a) floors
- b) ducts
- c) through walls
- d) buried in walls
- e) multi-occupancy buildings
- f) protected shafts containing stairs, lifts or other protected fire escape routes,

31. The industry practices and work standards for pipe installation within suspended & joisted floors including methods of lifting & replacing floorboards and chipboard flooring

32. The industry practices and work standards for pipe installation in concrete floors

33. The installation and protection of external installations to meet industry standards requirements e.g. protection against mechanical damage, minimum depth below ground level, etc

34. The procedures and work methods for connecting:

- a) to input services including; gas, earthing systems and ventilation
- b) pipework, valves and components to both new and existing gas systems and appliances

35. The procedures and work methods to ensure correct gas pipe identification

36. The safe process and procedures, equipment and legislative requirements for applying tightness testing and purging and electrical testing to gas appliances, systems and components

37. The procedures for checking the correct operation and performance of gas systems, valves and components and checking against the design specification to ensure safe functioning

38. The routines and sequences for commissioning gas systems, valves and components

39. How to complete all installation and commissioning documentation and records to be left with the property

40. The system handover procedures and demonstrating the operation of gas systems, valves and components to end users

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- 41. The steps to take when problems arise in the work activities
- 42. Job management structures and methods of reporting and recording job progress or problems delaying progress
- 43. How to safely collect and dispose of system contents that may be hazardous to health or the environment
- 44. 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

“Gas pipework” refers to pipework suitable for carrying gas; Copper, Steel, Malleable Iron, Pliable corrugated stainless steel tubing, Polyethylene, and Lead pipework, including the Associated Fittings/Jointing of materials.

“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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