

EUSDSG3.60

Gas tightness testing and direct purging - IGE/UP/1B



Overview

This national occupational standard defines the competences required for tightness testing and direct purging of small natural gas installations. This standard covers the work activities of planning, de-commissioning and commissioning gas installations.

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Performance criteria

You must be able to: **Plan and prepare work activities for tightness testing and direct purging - IGE/UP/1B**

- P1 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
- P2 survey the work site, pre-tightness testing and direct purging, for any damage or defects to existing building features and record it
- P3 advise the property occupier of any defects found
- P4 protect the work site and the building fabric against possible damage being caused during the tightness testing and direct purging process
- P5 get confirmation from the property occupier before the job starts to ensure that they agree the planned work
- P6 confirm the siting of the gas supply and the provision of ventilation meets the requirements for tightness testing and direct purging – IGE/UP/1B
- P7 check and confirm all materials, tools and test equipment necessary for the de-commissioning, tightness testing and direct purging process are available as required and are fit for purpose
- P8 confirm that the gas supply, earthing supply and the provision of ventilation meet the industry standards' requirements for the installation
- P9 carry out all necessary checks and tests to confirm the gas supply meets the industry requirements for the installation
- P10 check existing installation for any unsafe appliances and system components and apply the gas industry unsafe situations procedures as required

You must be able to: **De-commission gas systems and components to industry standards**

- P11 check that conditions within the gas system will permit safe de-commissioning
- P12 select and use the correct tools and equipment for de-commissioning activities
- P13 use designated safe isolation methods, tests, and procedures to de-commission gas systems and components
- P14 take precautionary actions to ensure that temporarily de-commissioned appliances, gas systems and components do not present a safety hazard
- P15 permanently remove and disconnect appliances and gas system components as required

You must be able to: **Tightness testing and direct purging of gas systems and components to industry standards - IGE/UP/1B**

- P16 confirm the complete pipework installation complies with the manufacturers' specification and industry standards

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- P17 carry out preparatory work for tightness testing and direct purging to meet industry standards
- P18 check that conditions within the gas system will permit safe tightness testing and direct purging
- P19 select and use the correct tools and equipment for tightness testing and direct purging activities
- P20 measure, calculate and record gas system installation volumes for tightness testing and direct purging activities
- P21 ensure ventilation for tightness testing and direct purging activities meets industry standards' requirements
- P22 remove existing gas components as required
- P23 ensure existing gas systems are clean and free of debris
- P24 carry out the tightness testing and direct purging process minimising damage to customer property and building features
- P25 use tightness testing procedures – IGE/UP/1B to confirm the integrity of the newly installed gas system and, where applicable, new and existing appliances
- P26 use tightness testing procedures – IGE/UP/1B to confirm the integrity of the existing gas system and, where applicable, new and existing appliances to ensure the installation doesn't exceed the maximum permissible pressure drop
- P27 use tightness testing procedures – IGE/UP/1B to confirm the integrity of the gas system where the maximum operating pressure (MOP) at the outlet of the emergency control valve (ECV) is above 75mbar but not exceeding 2bar, and no meter inlet valve is fitted
- P28 if the installation fails the tightness test either; 1) trace and repair the escape and retest, or 2) isolate unsafe gas appliances, gas system and components and apply the gas industry unsafe situations procedure
- P29 use purging procedures – IGE/UP/1B to confirm the safe supply of gas to the installed gas system and appliances
- P30 instruct the property occupier on the correct operation of the gas system, valves and components and provide them with their copy of the any literature
- P31 take precautionary actions to prevent the unauthorised use of un-commissioned gas appliances, gas systems and components by isolation procedures and use of warning notices

You must be able to:

Use and communicate data and information to carry out de-commissioning, tightness testing and direct purging to industry standards - IGE/UP/1B

- P32 liaise with the property occupier and other people who will be affected by the work during the planning, de-commissioning and tightness testing and direct purging processes to minimise disturbance to the job
- P33 use normative documents, industry standards, British Standards and information from manufacturers' instructions applicable to the gas system

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- and the appliance to ensure the work is done to the specification
- P34 advise of any delays to the work to any persons who are affected by the delay
- P35 report any delays in the work schedules to the job supervisor
- P36 advise the designated persons of any unsafe situations and actions required to remedy those situations
- P37 check that the customer is satisfied with the finished job
- P38 complete records and documentation confirming the safe tightness testing and direct purging of gas systems and components
- P39 complete gas system de-commissioning records

You must be able to:

Resolve problems which could affect de-commissioning, tightness testing and direct purging

- P40 rectify and report deficiencies in gas and earthing input services
- P41 resolve problems in accordance with approved procedures where pre-tightness testing and direct purging checks and tests reveal gas system or component defects
- P42 resolve problems in accordance with approved procedures when gas systems and components being tightness tested and purged do not meet design requirements
- P43 resolve problems in accordance with approved procedures when 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

- K1 regulations and guidance governing health and safety in the workplace, environmental protection and the use of risk assessments
- K2 legislation covering the general responsibilities of the operative for their own safety and that of others

You need to know and understand:

De-commissioning, Tightness testing and direct purging

- K3 the health, safety and environmental factors which need to be incorporated in risk assessment for the domestic tightness testing and direct purging process
- K4 safe access and working at heights
- K5 the tools and equipment necessary to provide safe access to work at heights, or in confined spaces
- K6 the methods of working which protect the building décor, customer property and existing systems and components
- K7 the tools, equipment, materials and components required for de-commissioning, tightness testing and direct purging processes – ordering, supplying, advising, checking and delivery procedures
- K8 the care and maintenance requirements of tools and equipment, and checks for safe condition
- K9 how to safely secure and store tools, equipment, materials and components to minimise loss or wastage
- K10 the potential hazards that could arise from all de-commissioning, tightness testing and direct purging activities and the checks to be carried out before work takes place
- K11 the steps to take should materials, components, tools and equipment not be available at the site to commence the de-commissioning, tightness testing and direct purging activity
- K12 how and where to access the required information, i.e. normative documents, industry standards guidance documents, British Standards and manufacturers' instructions applicable to the gas system and appliance, to ensure the work is done to industry standards
- K13 how to read and interpret the information contained in normative documents, industry standards guidance documents, British Standards and manufacturers' instructions
- K14 safe isolation methods, tests, and procedures to de-commission gas systems or components
- K15 the procedures for temporary and permanent de-commissioning of gas systems including use of temporary continuity bonds
- K16 the precautions to ensure that de-commissioned gas systems do not prove a safety hazard
- K17 measures to prevent de-commissioned gas systems being brought into

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- operation utilising safety and warning notices
- K18 the need to liaise with others whose procedures or routines may be affected by the suspension of the gas system operation
- K19 the points in the de-commissioning, tightness testing and direct purging process where co-operation and liaison with other trades and property occupier may be required
- K20 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
- K21 the types of pipe materials suitable for carrying gas - steel, malleable iron, copper, trappipe, polyethylene & lead, etc
- K22 the types of pipe fittings suitable for carrying gas – capillary, compression, push-fit, union joints & screwed joints
- K23 the industry practices and work standards for jointing materials and fittings suitable for carrying gas, including connecting to lead composition pipes
- K24 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
- K25 the procedures and work methods for connecting to input services including; gas, earthing systems and ventilation
- K26 the procedures and work methods of connecting pipework, valves and components to both new and existing gas systems and appliances
- K27 how to confirm that the gas supply and ventilation are adequate for de-commissioning, tightness testing and direct purging of the gas system, appliance(s) and components – IGE/UP/1B
- K28 how to measure, calculate and record gas system installation volumes for tightness testing and direct purging activities – IGE/UP/1B
- K29 the test equipment and legislative requirements for applying tightness testing to gas systems, appliances and components – IGE/UP/1B
- K30 tightness testing procedures – IGE/UP/1B to confirm the integrity of newly installed gas system and, where applicable, new and existing appliances
- K31 tightness testing procedures – IGE/UP/1B to confirm the integrity of the existing installed gas system and, where applicable, new and existing appliances to ensure the installation doesn't exceed the maximum permissible pressure drop
- K32 recognition of medium pressure regulator sets – IGE/UP/1B where the maximum operating pressure (MOP) at the outlet of the emergency control valve (ECV) is above 75mbar but not exceeding 2bar and, whether a meter inlet valve (MIV) is fitted
- K33 rightness testing procedures – IGE/UP/1B to confirm the integrity of gas systems where the maximum operating pressure (MOP) at the outlet of

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- the emergency control valve (ECV) is above 75mbar but not exceeding 2bar and, where a meter inlet valve (MIV) is fitted or, no meter inlet valve is fitted
- K34 the industry practices and procedures for tracing and repairing gas escapes
- K35 the process and procedures, equipment and legislative requirements for applying direct purging of gas systems, appliances and components
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- K36 the routines and sequences for direct purging of gas systems, appliances and components – IGE/UP/1B
- K37 the routines and sequences for commissioning gas systems, valves and components to industry standards
- K38 measures to prevent un-commissioned gas systems being brought into operation utilising safety and warning notices
- K39 how to complete all tightness testing and direct purging documentation and records to be left with the property occupier – IGE/UP/1B i.e., Gas testing & purging – domestic (NG) certificate, benchmarks, landlord/home owner gas safety record, etc.
- K40 the system handover procedures and demonstrating the operation of gas systems and components to end users
- K41 the steps to take when problems arise in the work activities
- K42 job management structures and methods of reporting and recording job progress or problems delaying progress
- K43 how to safely collect and dispose of system contents that may be hazardous to health or the environments e.g., waste products such as asbestos, insulation, etc
- K44 how and where to access the required information, i.e. Industry regulations regarding the safe disposal of system contents that may be hazardous to health or the environment e.g., Special Waste Regulations, Hazardous Waste Regulations, Control of Asbestos at Work Regulations, etc.
- K45 how to isolate unsafe gas appliances, gas systems and components and application of the gas industry unsafe situations procedure

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Additional Information

Behaviours

1. Treat people with civility
2. Is receptive to new ways of working
3. Conforms to industry standards, practices and procedures
4. Take pride in delivering high quality work
5. Take personal responsibility for resolving problems in your area of work

Glossary

“Small natural gas installations” refers to Natural Gas Systems and Components downstream of an emergency control valve (ECV). The installation shall have; a maximum operating pressure (MOP) at the outlet of the ECV not exceeding 2bar, an operating pressure (OP) at the outlet of the primary meter of 21mbar (nominal), a nominal bore of not greater than 35mm, a maximum rated capacity through the primary meter of 16m³/h (U16), and a maximum installation volume (IV) supplying an individual dwelling or non domestic premises of 0.035m³

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

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