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

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

**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

**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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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
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
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, tracpipe, 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 tightness testing procedures – IGE/UP/1B to confirm the integrity of gas systems where the maximum operating pressure (MOP) at the outlet of
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
K35.1 IGE/UP/1B
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
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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<th>Energy and Utility Skills</th>
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<td>Version number</td>
<td>1</td>
</tr>
<tr>
<td>Date approved</td>
<td>February 2010</td>
</tr>
<tr>
<td>Indicative review date</td>
<td>February 2015</td>
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<td>Current</td>
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<td>Energy and Utility Skills</td>
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<tr>
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<td>DSG3.6</td>
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<tr>
<td>Suite</td>
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<tr>
<td>Key words</td>
<td>gas, tightness, testing, direct, purging, utility, utilities, IGE/UP/1B</td>
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