



Gas Network Craftsperson Emergency Response Practical Task 2 – UP1a End-Point Assessment

Non- Domestic Tightness Testing

**Task Code UP1a
Level 3**

Practical Task Specification

This specification has been developed as part of the Gas Network Craftsperson emergency response pathway. The specification details the apprentice's required skills, knowledge and behaviour on all relevant matters of gas safety in relation to the strength testing, tightness testing and direct purging to new and existing installations in accordance with IGE/UP/1a.

The assessment specification is the minimum core gas safety standard of these requirements, but this does not preclude employers from enhancing the skills and knowledge of the learner through additional or company specific training.

Successful completion of this practical task will provide evidence that the apprentice has the required knowledge, understanding and performance skills to strength testing, tightness testing and direct purging to new and existing installations in accordance with IGE/UP/1a.

What does this specification look like?

Gas emergency response apprentices will be able to:

- Plan and prepare work activities for strength testing, tightness testing and direct purging - IGE/UP/1a
- Strength testing, tightness testing and direct purging of gas systems and components to industry standards - IGE/UP/1a
- De-commission gas systems and components to industry standards
- Use and communicate data and information to carry out decommissioning, strength testing, tightness testing and direct purging to industry standards

What does the assessment include?

This assessment covers the following matters of gas safety requirements:

- IGE/UP/1a – (TCP1a)

To pass the practical task, the apprentice must demonstrate their achievement of all assessment outcomes. This will be evidenced through practical assessment, typically being delivered under simulated conditions, in a realistic workplace environment. Evidence of the apprentice's achievement must be recorded on the assessment templates provided and on the practical task record form. Practical tasks whilst retained within the apprentice's logbook cannot be used as evidence of logbook criteria completion.

The practical assessments must include:

- Carrying out a strength test
- Carrying out a tightness test immediately following strength test
- Carrying out a tightness test – existing installations (gas)

- Direct purge including the commissioning and decommissioning of low pressure natural gas pipework installations

Realistic Working Environments (RWE) Centre Requirements

Centres are responsible for ensuring that the RWE assessment is suitably controlled to ensure that assessment decisions are valid and reliable, and that work submitted for assessment by the apprentice is prepared and produced by them independently, without assistance from others, and free of plagiarism.

The practical task must be designed following the guidance and requirements given in this document. The Technical Expert checklist must be adhered to and cannot be altered without prior written consent from EUIAS.

Centres may deliver any number of the practical tasks together in combined assessment of their own design, but this must be in with the prior agreement with EUIAS.

Where the combined option is used the performance and knowledge criteria of each unit assessment must be satisfied and the respective Technical Expert checklists must be completed.

The following normative documents should be made available to the apprentice throughout the assessment process:

Building Regulations
BS6891
BS6400
BS7967
BS5440
IGE/UP/1B
IGE/UP/1A
GSIUR
GSIUP version 7
BS7671 / on-site guide to BS767

Practical Task Centre Requirements

The assessments covering the matters of gas safety requirements are:

- UP1a-1 Carrying out a strength test
- UP1a-2 Carrying out a tightness test immediately following strength test
- UP1a-3 Carrying out a tightness test – existing installations (gas)

UP1a-4 Direct purge including the commissioning and decommissioning of low pressure natural gas pipework installations

The practical task must be assessed by a Technical Expert who is independent of the apprentice; please refer to the gas network craftsman scheme handbook for further details.

For **UP1a-1** and **UP1a-2** the assessment area must be designed to allow the apprentice to carry out a strength test of pipework. The assessment area should include all of the following:

- A length of extension outlet pipework that can be valved off or isolated from the existing installation pipework. This will be treated as 'new' and enable 'strength testing' to be assessed
- Additional section of pipework connected via isolation valves with appliances connected allowing a tightness test between the isolation valve and appliances
- A recorded 'risk assessments or test certificate' on the pipework being tested to confirm that this has been tested and passed the test at a minimum pressure of 150 mbar. This will ensure the integrity of the pipework when the apprentices undertake strength testing at 82.5 mbar
- Documented faults should be evident on the installation to allow the apprentice to identify and correct these prior to 'strength testing'
- Examples of a suitable pipework installations should be provided; Case 4 & Case 5 on page 8 of IGE/UP/1A Edition 2 will suffice
- Suitable method for controlled insertion of dry compressed air or nitrogen into pipework section to be strength tested
- Where nitrogen is used this must be under the control of a risk assessment
- A selection of pressure gauges must be available to enable the apprentice to identify the correct type of gauge to carry out the test
- Recognised strength and tightness testing and purging certificates must be available
- The 'live' gas installation pipework must be protected to prevent gas / air mixtures entering the upstream supply

For **UP1a-3** the assessment area must be designed to allow the apprentice to tightness test an existing pipework installation including a meter. The assessment area should include all of the following:

- A suitable gas meter of capacity 16m³/hr or above connected to an outlet pipework installation that can be treated as 'existing', where total volume ≤ 1 m³
- The pipework installation must contain pipes of nominal bore >35mm but ≤ 150 mm
- Operating pressure must be ≤ 40 mbar at outlet of primary meter regulator

- There must be the facility to simulate a small controllable gas escape to the 'existing' installation slightly exceeding the permissible drop for size of system to enable detection and ratification
- A selection of pressure gauges to enable identification of the correct type of gauge to deliver readings to appropriate GRMs.
- Suitable strength and tightness testing and purging certificates

For **UP1a-4** the assessment area must be designed to allow the apprentice to purge, commission and decommission a low pressure gas pipework installation. The assessment area should include all of the following:

- A section of pipework of nominal bore $>35\text{mm}$ but $\leq 150\text{ mm}$ - this could include a meter of capacity $16\text{m}^3/\text{hr}$ or above if deemed necessary.
- A suitably sized vent stack to include: volume or flow meter; a full bore control valve; sample point; suitable flame arrestor at termination point and suitable purge hoses in accordance with table 9 of IGE/UP/1A
- Intrinsically safe gas detection instrument for sampling gas at purge point
- A selection of "Warning Notices" and "Warning Tape" to advise and warn of purge requirements
- A selection of pressure gauges to enable identification of the correct type of gauge to deliver readings to appropriate GRMs
- Suitable strength and tightness testing and purging certificates

The full range of warning labels and advisory notices and appropriate documentation for the recording of details and any defects must be made available to the apprentice.

The area used for this exercise must be for assessment purposes only

Apprentice Requirements

To achieve a pass in these assessments the apprentice must complete all of the following:

- Ensure all health and safety requirements are observed throughout the assessment
- Setting out the requirements for the strength test
- Assess the work location, plan out the pipework routes and the materials that are required
- Confirm the availability of all appropriate technical information required to complete the task
- Carry out visual checks prior to a strength test
- Carry out a strength test
- Complete any documentation required after a strength test
- Setting out the requirements for the tightness directly after a strength test

- Carry out visual checks prior to a tightness test
- Carry out a tightness test
- Complete any documentation required after a tightness test
- Setting out the requirements for the purge
- Carry out visual checks prior to a purging
- Select and display relevant notices and labels
- Set up all the required equipment prior to purging the installation
- Commission the installation - purge from air to gas
- Decommission the installation - purge from gas to air
- Complete any documentation required after the purge

Grading

This assessment is graded as Pass or Fail. The Technical Expert will determine successful completion of the practical tasks using the Technical Expert checklist. This will determine Pass or Fail.

Assessment Duration

- The apprentice has 60 minutes to complete [UP1a-1](#).
- The apprentice has 120 minutes to complete [UP1a-2](#).
- The apprentice has 45 minutes to complete [UP1a-3](#).
- The apprentice has 45 minutes to complete [UP1a-4](#).