



Gas Network Craftsperson Emergency response Practical Task 4 - TTDI End-Point Assessment

Tightness Testing Domestic Installations

**Task Code TTDI
Level 3**

Assessment 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 installation and commissioning of regulators with medium pressure supply.

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 test and commission domestic gas pipework installations.

What does this specification look like?

Gas emergency response apprentices will be able to:

- Select, install and commission domestic natural gas meters and regulators
- Test for tightness and purge installations in accordance with industry standards and procedures
- Use and communicate data and information to carry out commissioning, tightness testing and direct purging
- Complete the required documentation when installing and commissioning natural gas domestic meters and regulators

What does the assessment include?

This assessment covers the following matters of gas safety requirements:

- Tightness testing and purging. Total IV $\leq 0.035 \text{ m}^3$ (LP)
- Tightness testing and purging. Total IV $\leq 0.035 \text{ m}^3$ (MP)
- Checking and / or setting meter regulators
- Re-establish existing gas supply and re-light appliances / plant
- Installation of domestic gas meters

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 task will include:

- The installation of a natural gas meter $\leq 6\text{m}^3/\text{hr}$
- Tightness testing and purging the low pressure installation
- Completion of a medium pressure tightness test
- Exchange a natural gas meter $\leq 6\text{m}^3/\text{hr}$
- Confirm the satisfactory standing, working and operating pressures on low pressure natural gas installation

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
GSIUR
GSIUP version 7
BS7671 / on-site guide to BS767

Practical Assessment Centre Requirements

The assessments covering the matters of gas safety requirements are:

- TTDI1 Install a gas meter
- TTDI2 Carry out a tightness test and purge the installation
- TTDI3 Tightness testing existing natural gas installations for 75mbar $\leq \text{MOP} \leq 2\text{bar}$ without a MIV (IGE/UP/1B Edition 3 Appendix 4 A4.3)
- TTDI4 Exchange a natural gas meter $\leq 6\text{m}^3/\text{hr}$
- TTDI5 Check standing, working and operating pressures on an installation

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

For **TTDI1** and **TTDI2** the assessment area must be designed to allow the apprentice to install a low-pressure natural gas meter and carry out a tightness test and subsequent commissioning of that installation. It is expected these assessments should be a continuation of the installation previously installed and air tested under the pipework unit DPWI. The assessment area should include all of the following:

- A low pressure installation with the ECV capped off
- A gas meter and appropriate fittings and fixings as required, are to be made available for selection and installation by the apprentice
- The installation should include with a gas cooker installed on a section of pipework, with no gas meter installed
- Labels and notices must not be connected to the installation
- A selection of appropriate and inappropriate labels and notices should be available for use by the apprentice
- Centres are free to arrange assessment bays to suit their requirements providing that the conditions of providing a realistic working environment and safety requirements are met
- The area used for assessment must be for such purposes only and the apprentice must not have previously worked in the same area or bay
- The apprentice must be provided with a diagram of the completed installation design

For **TTDI3** the assessment area must be designed to allow the apprentice to tightness test a meter installation with a supply pressure of 75mbar - $\leq 2\text{bar}$. This supply pressure can be provided through the use of compressed air to replicate the pressure expected when encountering a medium pressure system. The following criteria must be satisfied:

- Provision of a medium pressure regulator connected to a domestic gas meter and installed with a selection of appliances

For **TTDI4** the assessment area must be designed to allow the apprentice to exchange a low-pressure natural gas meter. The assessment must be developed using the following equipment and criteria:

- A low pressure installation connected to a primary metric domestic gas meter and installed with appliances connected
- A primary imperial domestic gas meter (not labelled) allowing the learner to exchange the meter
- A simulated gas service pipe of minimum diameter $\frac{3}{4}$ " , terminating with a capped ECV fitted in either the horizontal or vertical plane and turned on
- A gas supply of pressure ≤ 75 mbar
- There must be no marking or labels on the gas service or ECV
- All materials to facilitate the installation must be supplied e.g. regulator, pipe, flexible connection, meter bracket, fittings to enable the installation of the meter and associated components

For **TTDI5** the assessment area must be developed to allow the apprentice to check and adjust as necessary, the standing, working and operating pressures on domestic gas installations. The assessment must be developed using the following equipment and criteria:

- A natural gas low-pressure installation including pipework with a domestic gas meter and regulator fitted
- A selection of appliances installed and connected to a the gas installation
- A regulator set at an incorrect pressure that will require resetting
- A selection of regulator seals and equipment

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 and the apprentice must not have had prior training in this area.

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
- Specify, install and commission natural gas domestic meters and regulators
- Identify and complete the documentation required when installing and commissioning natural gas domestic meters and regulators
- Test for tightness and purge installations in accordance with industry standards and procedures
- Tightness testing and direct purging of gas systems and components
- Use and communicate data and information to carry out commissioning, tightness testing and direct purging
- Exchange a gas meter
- Correctly use a suitable temporary continuity bond

- Select and applying the correct labels and notices
- Confirm the meter regulator operating pressure
- Adjust the meter regulator operating pressure
- Re-seal the meter regulator following any adjustment
- Disconnect a meter and seal the meter, service and outlet connections

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 45 minutes to complete **TTDI1**.

The apprentice has 30 minutes to complete **TTDI2**.

The apprentice has 30 minutes to complete **TTDI3**.

The apprentice has 45 minutes to complete **TTDI4**.

The apprentice has 30 minutes to complete **TTDI5**.