

Standard: Gas Network Team Leader
Pathway: Main Layer
Level: 2

End-point assessment: Trade Test

Mains Installation Techniques 90 –
355mm diameter

Assessment Specification

This assessment specification has been developed as part of the Gas Network Team Leader Main layer standard. The specification details the apprentice's required skills, knowledge and behaviour on all the key aspects of the Gas Network Team Leader - main laying activity.

This end point assessment should allow the apprentice to demonstrate the competence required to follow work instructions and specifications in order to complete the butt fusion and electro-fusion of PE pipe of diameter range - 90mm to 355mm. This must include the use of both PE and Metallic (Squeeze off and Bag Stop) flow stopping techniques on a pressurised system <75mb. The assessment must also include the connection, testing and commissioning of a new LP PE main of diameter range - 90mm to 355mm utilising at least one metallic to plastic (PECAT adapter) connection and finally the decommissioning of a LP gas main through direct purging methods.

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

Successful completion of this unit should provide evidence that the apprentice has the required knowledge, understanding and performance skills.

What does this specification look like?

To achieve this unit the apprentice must demonstrate their achievement of all assessment outcomes. This unit will be evidenced through practical assessment, typically being delivered under simulated conditions, in a realistic workplace environment. Evidence of the apprentices' achievement must be included in their work log or their portfolio.

What does the assessment include?

Gas Network Team Leader Apprentices will be expected to install mains of diameter >90mm including:

- Making joints using butt fusion techniques
- Making joints using electro-fusion techniques
- Testing and Commissioning of mains
- Carrying out flow stopping operations
- Decommissioning low pressure gas mains through direct purging methods

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

Centres may deliver any number of assessments 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 assessor checklists must be completed.

The necessary operational procedures should be made available to the apprentice throughout the assessment process.

Practical Assessment Centre Requirements

The core assessment requirements are in the following areas

MLPJ EPA Pipe Work Jointing (PE)
MLFSSOEPA Flow Stopping – Squeeze off
MLFSBSEPA Flow Stopping – Bag stop
MLTCEPA Testing and Commissioning
MLDEPA Decommissioning

Where the optional units SMLMAO01, SMLMAO02, SMLMAO03 & SMLMAO04 are delivered, it is recommended that the following additional end point assessments are included:

MSLOEPA1 Dealing with Reported Gas Escapes
MSLOEPA2 Repair Techniques

The assessments must be assessed by a technically competent assessor who is independent of the apprentice, please refer to the Gas Network Team Leader scheme handbook for further details.

The assessment area must be designed to allow the apprentice to demonstrate the skills as prescribed in the performance criteria. Evidence for the practical aspects must be observed

in the realistic working environment. The pipe work used in the assessment must be of a diameter equal to or above 90mm. A sketch of the proposed task must be made available to the apprentice.

Centres may create workbooks that will allow the apprentice to demonstrate their underpinning knowledge on method statements, testing and purging calculations etc. The same examples must not have been utilised as part of the apprentices training

The scenario used for this exercise must be for assessment purposes only and the apprentice must not have had prior access to this.

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
- Complete a site-specific risk assessment
- Select method statements appropriate for the activity
- Use company specific procedures
- Complete any calculations regarding testing, commissioning and decommissioning of the main
- Make joints using butt fusion techniques
- Make joints using electro-fusion techniques
- Complete a PE Single Squeeze-off operation (90 - 355mm) at Low Pressure
- Complete a Metallic Flow Stopping 100mm (4") or above at Low pressure
- Remove a section of main
- Pressure test a new main - low pressure
- Connect the new main to the existing supply and commissioning (LP)
- Decommissioning of a LP gas main through direct purging methods

The delivery of the assessment is in three separate areas. The more complex activity would be the flow-stopping. It is envisaged that this is delivered on a pre-installed, pre-drilled assessment rig that simulates a realistic working environment with the exception that the apprentice would not be expected to excavate to access the gas main. The apprentice would however, be expected to confirm all risk assessment requirements prior to undertaking any excavation activities. The assessment rig used should consist of a 100mm metallic pipe to one end connected to a PE main of a minimum 90mm diameter at the other. It is suggested that there is a mid-section that can be removed once the flow stop is made. The rig must be pressurised with air at a pressure in the range of 21mb – 75mb throughout the assessment. Pressure testing would be completed as part of this activity. The metallic drilling would be on a separate low-pressure rig and both the butt fusion and electrofusion joints can be completed in the assessment area using short lengths of PE pipe in the 90mm – 180mm

diameter range. These PE joints would not require any pressure test to be applied, they will however be subject to visual inspection by the assessor to confirm a suitable weld has been made.

Assessment centre facilities used for the end-point assessment, must be confirmed as suitable by the EUIAS prior to any EPA practical assessment (trade tests) being undertaken.

Where the apprentice has been trained on dealing with reported gas escapes and repair techniques they should in addition to the above, complete the following:

- Apply and test mains repair techniques
- Minimise risk to life and property when attending a reported gas escape

Assessor Requirements

Apprentices carrying out the trade test will be observed by an EUIAS approved Technical Expert.

The Technical Expert may question the candidate as they are carrying out the practical trade test. Questions may cover the following areas:

- Practical experience and knowledge gained through work experience
- Technical questioning related to the installation, testing, commissioning and maintenance of operational
- A variety of “what if” scenarios to determine problem solving skills
- Comprehension of basic operations or engineering principles related to plant and equipment
- Ability of candidate to elaborate in their field of expertise
- General attitude and enthusiasm of the candidate

Candidates should be able to demonstrate a depth of understanding of the practical principles of the systems they are working on.

Permissible allowances and reasons for immediate failure

- Apprentices do not have to carry out the task in a prescribed sequence but must cover all of the assessment criteria required, provided health and safety is not compromised
- Apprentices should ensure that the tasks are completed safely. It is permissible not to have identified all tools and safety equipment prior to the task starting but the additional requirements must be identified and acted upon appropriately as the task progresses
- Apprentices may not be able to return the equipment to service or check its operation at the end of the task due to other issues identified during the course of the work. If this occurs an assessment of the candidate’s competence in those areas can be made via technical questioning and professional discussion
- Apprentices will fail immediately if they do not select and wear the correct PPE for the task
- Apprentices will fail immediately if they do not follow control measures as set out in the risk assessment
- Apprentices will fail immediately if they put themselves or anyone else at danger – i.e. by failing to safely isolate plant and equipment.

Grading

This assessment is graded as Fail or Pass. The assessor will determine successful completion of the practical tasks using the Assessor Checklist, this will determine pass or fail.

Assessment duration

The following are indicative durations for the completion of each assessment area:

MLPJ EPA	Pipe Work Jointing (PE)	2 hours
MLFSSOEPA	Flow Stopping Squeeze -off	1.5 hours
MLFSBSEPA	Flow Stopping Bag - Stop	2.5 hours
MLTCEPA	Testing and Commissioning	1.5 hours
MLDEPA	Decommissioning	1.0 hours

Where delivered the following additional end point assessment suggested durations are:

MSLOEPA1	Dealing with Reported Gas Escapes -	2 hours
MSLOEPA2	Repair Techniques -	1.5 hours