

Title	Lay steel gas pipe		
Level	4	Credits	10

Purpose	<p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of procedures, documentation, materials, and equipment for laying a steel gas pipe; – prepare to lay steel gas pipe; – lay steel gas pipe; – carry out pipe reinstatement; and – complete reporting and documentation.
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Classification	Gas Industry > Gas Network Construction
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Available grade	Achieved
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Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer specifications, company procedures, and legislative requirements.
- 2 Legislation, regulations, and standards relevant to this unit standard include:
 - Gas Act 1992;
 - Health and Safety at Work Act 2015;
 - Resource Management Act 1991;
 - Gas (Safety and Measurement) Regulations 2010;
 - Health and Safety in Employment (Pipelines) Regulations 1999;
 - AS/NZS 4645.1:2018 *Gas distribution networks – Part 1: Network management*;
 - AS/NZS 4645.2:2018 *Gas distribution networks – Part 2: Steel pipe systems*;
 - AS 2885.1: 2018 *Pipelines – Gas and liquid petroleum – Part 1: Design and Construction*, available from www.standards.govt.nz;
 - AS 2832.1: 2015 *Cathodic protection of metals part 1: Pipes and cables*, available from www.standards.org.au;
 - ISO 9000; available from www.iso.org;
 - *Excavation Safety Good Practice Guidelines*, available from www.worksafe.govt.nz, and any subsequent amendments and replacements.
- 3 This unit standard includes laying a pipe in an open trench or manually inserting a pipe in an annulus. This unit standard excludes site excavation, thrusting, drilling, testing, connecting, and purging and excludes the jointing of pipe.

4 Definition

Company procedures mean the documented methods for performing work activities, and include health and safety, operational, environmental, and quality management requirements. They may refer to legislation, regulations, guidelines, standard operating procedures, manuals, codes of practice, or policy statements.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of procedures, documentation, materials, and equipment for laying steel gas pipe.

Performance criteria

1.1 Documentation and company procedures for laying steel gas pipe are located and described in terms of their purpose.

Range may include – network standard, safe work procedure, work instruction, job hazard analysis; evidence of three items of documentation is required.

1.2 Documentation and instructions are obtained for a specified job.

Range may include – site location, utility plans, mark-outs, consents, easements, drill permit, network drawings, pipe route and depth, welding procedure specification, pipe testing requirements; evidence of four items of documentation is required.

1.3 Potential environmental and safety hazards associated with laying steel pipe are described in terms of their controls.

Range hazards may include – manual handling, lifting operations, welding, radiation, plant, equipment, working in excavations, other utilities, vehicles, public, waste products, electrocution; evidence of six hazards is required.

1.4 Types and function of steel pipe materials and pipe laying equipment are described in terms of their application.

Range materials include – steel pipe, protective coatings, flanges, bends, insulation joint, weldolet, threadolet; pipe laying equipment – pipe supports, pipe rollers, lifting equipment, breakaway coupler.

- 1.5 The requirements for laying steel pipe are described in terms of the methodology used.
- Range requirements include – site preparation, pipe welding and inspection, pipe stringing, pipe bending, pipe lifting and handling, depth of cover, pipe trench bed, pipe inspection, backfilling, additional pipe protection, pipe location marking.
- 1.6 Potential faults associated with the incorrect application and operation of equipment and procedures are described in terms of the steps to avoid them.

Outcome 2

Prepare to lay steel gas pipe.

Performance criteria

- 2.1 The position of the trench or annulus is confirmed.
- 2.2 Pipe laying equipment is prepared, handled, and positioned.
- Range may include – pipe supports, pipe rollers, pipe lifting equipment, safety barriers, signage.
- 2.3 Underground utilities are protected and supported to prevent damage.
- 2.4 Pipe trench bed is prepared, confirmed to be free of obstructions and irregular materials, and pipe bedding material is correctly positioned.
- 2.5 Pipe clearance from other plant is maintained in accordance with other utility operator's requirements.
- 2.6 Pipe is inspected for damage or ovality.
- 2.7 Pipe protective coating is inspected in terms of damage and to determine any repair required.
- 2.8 Pipe internal is inspected for cleanliness and pipe ends are sealed.
- 2.9 Pipe is placed and supported in specified pre-laying position.

Outcome 3

Lay steel gas pipe.

Performance criteria

- 3.1 Hazards for the specified job are identified and controlled.
- 3.2 Steel pipe is laid or inserted using lifting equipment and pipe laying equipment.
- Range may include – bond cable, pipe insulators.

- 3.3 Pipe is externally inspected in the trench for evidence of coating damage, and any damaged coating is repaired.

Outcome 4

Carry out pipe reinstatement.

Performance criteria

- 4.1 Backfill materials are placed and compacted.
- 4.2 Warning tape is installed where required.
- 4.3 Additional pipeline protection is installed where required.

Outcome 5

Complete reporting and documentation.

Performance criteria

- 5.1 Records and documents are completed and processed, and information is communicated to internal or external parties as required.

Range may include – as-built, inspection sheets, pipe material identification information, completion notice.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 April 2023	N/A

Consent and Moderation Requirements (CMR) reference	0014
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Waihangā Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@WaihangāAraRau.nz if you wish to suggest changes to the content of this unit standard.