

Title	Demonstrate knowledge of gas transmission pipelines and distribution networks		
Level	3	Credits	6

Purpose	People credited with this unit standard are able to, for a gas network: demonstrate knowledge of gas transmission pipelines and distribution networks, the end use and supply requirements of a gas network; gas network components and gas pressure; and describe the methods of handling, storage, and transportation of gas network components.
----------------	--

Classification	Gas Industry > Gas Network Operations
-----------------------	---------------------------------------

Available grade	Achieved
------------------------	----------

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's specifications, company procedures and legislative requirements. This includes the knowledge and use of suitable tools and equipment.
- 2 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of:
Health and Safety at Work Act 2015;
Health and Safety in Employment (Pipelines) Regulations 1999;
Gas Act 1992;
Gas (Safety and Measurement) Regulations 2010;
Resource Management Act 1991;
Hazardous Substances and New Organisms Act 1996;
AS/NZS 4645.1:2018 *Gas distribution networks – Network management*;
AS 2885.1-2018 *Pipelines – Gas and liquid petroleum Design and construction*;
AS 2885.3-2012 *Pipelines – Gas and liquid petroleum Operation and maintenance*;
and any subsequent amendments and replacements.
- 3 References
Australian standards (AS) may be found at www.standards.org.au;
Australian/New Zealand standards (AS/NZS) may be found at www.standards.govt.nz.
- 4 Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

- 5 The network does not include any piping downstream of the meter outlet or, where there is no gas measurement system, downstream of the custody transfer point.
- 6 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 gas transmission pipelines and distribution networks.

Performance criteria

- 1.1 Gas stations are described according to their function.
- Range compressor, gate, metering, scraper, main line valve, pressure control, pressure reduction, district regulator.
- 1.2 Equipment used in stations is described according to their function.
- Range inlet valve, separator, heater, filter, pressure control valve, pressure safety valve (relief and slam-shut), non-return valve, meter, corrector, outlet valve, odorant vessel, pig trap.
- 1.3 Gas transmission pipelines and distribution networks are described according to their construction material and coatings.
- Range material – steel, high density polyethylene, polyethylene, cast iron; coatings – coal tar enamel, extruded polyethylene, fusion bonded epoxy.

Outcome 2

Demonstrate knowledge of the end use and supply requirements of a gas network.

Performance criteria

- 2.1 Gas transmission pipelines are described according to services provided.
- Range distribution networks, direct supply to industrial customers.
- 2.2 A gas distribution network is described according to its end use.
- Range commercial, industrial, residential.

2.3 Gas transportation is described according to supply requirements.

Range may include – flow, pressure, capacity, continuity, quality, odourisation, gas measurement.

Outcome 3

Demonstrate knowledge of gas network components.

Performance criteria

3.1 Gas network system components are described according to their function.

Range pipes, tubing, fittings, flanges, gaskets.

3.2 Gas network system components are described according to their application.

Range pipe standards, design codes, pressure rating.

3.3 Gas network system joints are described according to their application.

Range steel welded, butt fusion, electrofusion, screwed, flanged, compression fittings, cathodic protection isolation kits, sealants.

3.4 Gas network system valves are described according to their function and application.

Range may include – ball, plug, globe, gate, needle.

3.5 Gas network system valve actuators are described according to their function and application.

Range manual, pneumatic, electric, hydraulic.

Outcome 4

Describe methods of handling, storage, and transportation of gas network components.

Performance criteria

4.1 Methods of identifying, handling, transporting, and storing gas network components are described.

Range may include – badge plate, specifications, certificates, dust caps, packaging, sealing wire, weight.

Outcome 5

Demonstrate knowledge of gas pressure in a gas network.

Performance criteria

- 5.1 Types of gas pressure are defined.
- Range gauge, atmospheric, absolute.
- 5.2 Units of pressure and the relationship between them are defined.
- Range metric, imperial.
- 5.3 Pressure ranges in a gas network are defined according to NZS/AS 2885, AS/NZS 4645 and specific company operating pressures.
- Range low, medium, intermediate, high.
- 5.4 Devices for the measurement of gas pressure are described.
- Range may include – water gauge, bourdon tube gauge, pressure recorder, data logger, digital devices, pressure transducers, mercury gauges.

Replacement information	This unit standard replaced unit standard 12520, unit standard 12521, unit standard 19541 and unit standard 19542.
--------------------------------	--

Planned review date	31 December 2024
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 August 2017	31 December 2021
Review	2	27 February 2020	N/A

Consent and Moderation Requirements (CMR) reference	0014
--	------

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.