

Title	Demonstrate knowledge of trade science for gasfitting		
Level	4	Credits	4

Purpose	<p>This unit standard is for people who work in the gasfitting industry.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of properties of gases used in gasfitting work; and – describe applications of gases used in gasfitting work.
----------------	---

Classification	Plumbing, Gasfitting and Drainlaying > Gasfitting
-----------------------	---

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

Guidance Information

- 1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:
- Building Act 2004;
 - Gas Act 1992;
 - Gas (Safety and Measurement) Regulations 2010;
 - Health and Safety at Work Act 2015;
 - Plumbers, Gasfitters, and Drainlayers Act 2006;
 - Plumbers, Gasfitters, and Drainlayers Regulations 2010.

The following standards, which are available at <http://www.standards.govt.nz>:

- AS/NZS5601.1:2013 *Gas installations – Part 1: General installations*,
- AS/NZS5601.2:2013 *Gas installations – Part 2: LP Gas installations in caravans and boats for non-propulsive purposes*;
- NZS 5442:2008 *Specification for reticulated natural gas*;
- NZS 5435:1996 *Specification for liquefied petroleum gas (LPG)*.

The following Building Code clauses, and any related Acceptable Solution and Verification Method documents, which are available at <https://www.building.govt.nz/>:

- New Zealand Building Code Clause G11 Gas as an Energy Source;
- New Zealand Building Code Clause G4 Ventilation.

Any new, amended or replacement referenced standards, codes of practice, guidelines, Building Code Acceptable Solutions and Verification Methods, or authority requirements affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.

- 2 Candidates must hold a current limited certificate trainee authorisation or exemption under supervision as issued under the Plumbers, Gasfitters, and Drainlayers Act 2006.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of properties of gases used in gasfitting work.

Performance criteria

- 1.1 Describe the characteristics of fuel gases used.
- Range characteristics include – relative density, upper and lower explosive limits, ignition temperatures, vaporisation, calorific value; gases include – synthetic natural gas, natural gas, LPG (butane, propane and general product), biogas, hydrogen.
- 1.2 Describe composition of gases used.
- Range gases used include – natural gas, hydrogen, LPG.
- 1.3 Explain combustion characteristics of gases used.
- Range characteristics include – chemical process relating to combustion, incomplete combustion, changes in combustion, products of combustion, flame stability, presence of inert gases; gases include – natural gas, hydrogen, LPG.
- 1.4 Describe Boyle's Law and Charles' Law in relation to gases.

Outcome 2

Describe applications of gases used in gasfitting work.

Range gases include – synthetic natural gas, natural gas, LPG, biogas, hydrogen.

Performance criteria

- 2.1 Describe common uses of gases.
- 2.2 Describe safe storage requirements of gases used.

Planned review date	31 December 2029
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 November 2017	31 December 2028
Review	2	25 July 2024	N/A

Consent and Moderation Requirements (CMR) reference

0003

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

Comments on this unit standard

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