

Title	Design gasfitting installations		
Level	5	Credits	30

Purpose	People credited with this unit standard will be able to design gasfitting installations.
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Classification	Plumbing, Gasfitting and Drainlaying > Gasfitting
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Available grade	Achieved
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Guidance Information

- 1 This unit standard builds upon the pre-existing knowledge and skills held by a tradesman gasfitter. It reflects part of the increased knowledge and skill set that is required to become recognised as a certifying gasfitter. The competencies expected of a tradesman gasfitter have already been demonstrated and reassessment is not required.

- 2 References
 Building Act 2004;
 New Zealand Building Code;
 Construction Contracts Act 2002;
 Electricity Act 1992;
 Gas Act 1992;
 Gas (Safety and Measurement) Regulations 2010;
 Health Act 1956;
 Health and Safety at Work Act 2015;
 Plumbers, Gasfitters, and Drainlayers Act 2006;
 Plumbers, Gasfitters and Drainlayers Board (Gasfitting Registration and Licensing) Notice 2016;
 Resource Management Act 1991;
 The following standards, which are available at <http://www.standards.govt.nz>:
 NZS 3604:2011 *Timber-framed buildings*;
 NZS 4219:2009 *Seismic performance of engineering systems in buildings*;
 AS/NZS 5601.1:2013 *Gas installations – Part 1: General installations*;
 AS/NZS 5601.2:2013 *Gas installations – Part 2: LP Gas installations in caravans and boats for non-propulsive purposes*;
 The following guides, which are available at <http://www.worksafe.govt.nz>:
Health and Safety by Design: 2018;
 and all subsequent amendments and replacements.

- 3 Definitions
Drawings – plans and schematics. Plans must be to scale, be drawn on the relevant architectural background, and include a legend. It is expected that drawing

instruments, Computer Aided Design (CAD), or Building Information Modelling (BIM) software are used for drawing.

LPG – liquefied petroleum gas.

4 Assessment

Assessments requiring application or demonstration of skills and knowledge may be performed using workplace evidence or evidence derived from simulation or scenario based activities.

Includes application of trade calculations and science. Trade calculations and science may be demonstrated through the use of graphs, tables, software tools, or online or other electronic resources.

5 All tasks must be carried out in accordance with:

Gas Act 1992;

Gas (Safety and Measurement) Regulations 2010;

Health and Safety at Work Act 2015;

New Zealand Building Code; and

any other relevant legislation, regulations, codes, or standards as applicable to drainlaying.

6 Range

Includes a minimum of three installations;

includes one design for a natural gas installation and one design for an LPG installation;

includes one installation of – a gas-fired appliances and equipment installation in a commercial, industrial, or multi-level residential setting; or an LPG installation for non-propulsive purposes in a mobile application;

a minimum of two pipe materials must be used across the installations.

Outcomes and performance criteria

Outcome 1

Design gasfitting installations.

Performance criteria

- 1.1 Calculate pipe sizes for the installations with consideration of pressures, gas flow, and input ratings.
- 1.2 Determine any necessary gas supply pipework and service lines, meters, regulator systems, appliances, and pressure and flow controls for the installations.
- 1.3 Determine the type, number, and position of safety devices for the installations.

Range safety devices may include but are not limited to – over-pressure protection, safety shut-off valves.
- 1.4 Calculate ventilation requirements for the installations.
- 1.5 Determine the layout of the pipework for the installations.

- 1.6 Specify the materials for the installations.
- 1.7 Analyse potential adverse effects of the designs on structure and adjust designs to mitigate these effects.
- Range may include but is not limited to – structural integrity, weather tightness, seismic, fire rating, positioning of installation in relation to other services.
- 1.8 Assess the potential for risks resulting from the designs in the installation stage.
- Range risks may include but are not limited to – risks to installers, risks to other on-site personnel, and risks to the public.
- 1.9 Prepare the drawings and specifications to document designs.

Planned review date	31 December 2024
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 March 2020	N/A

Consent and Moderation Requirements (CMR) reference	0003
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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 The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.