

<b>Title</b>	<b>Demonstrate knowledge of the installation, commissioning, and maintenance of consumer gas pipework</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>6</b>

<b>Purpose</b>	<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"> <li>– demonstrate knowledge of concepts and principles in terms of their application to the installation, commissioning, and maintenance of consumer gas pipework;</li> <li>– demonstrate knowledge of determining consumer gas supply requirements;</li> <li>– demonstrate knowledge of the installation, testing, and commissioning of consumer gas pipework;</li> <li>– demonstrate knowledge of the maintenance of consumer gas pipework; and</li> <li>– describe regulatory requirements as applied to the installation, commissioning, and maintenance of consumer gas pipework.</li> </ul>
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<b>Classification</b>	Plumbing, Gasfitting and Drainlaying > Gasfitting
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<b>Available grade</b>	Achieved
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## Guidance Information

- 1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

Building Act 2004;

Health and Safety at Work Act 2015;

Gas Act 1992;

Gas (Safety and Measurement) Regulations 2010;

Plumbers, Gasfitters, and Drainlayers Act 2006;

Plumbers, Gasfitters, and Drainlayers Regulations 2010.

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

NZS 3604:2011 *Timber-framed buildings*,

AS/NZS 5601.1:2013 *Gas installations – Part 1: General installations*.

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 G10 Piped Services,
- New Zealand Building Code Clause G11 Gas as an Energy Source.

The following standard available at [NASH Standard Part Two: May 2019 – NASH \(nashnz.org.nz\)](http://nashnz.org.nz), The National Association of Steel Framed Housing Inc (NASH) Standard Part 2:2019 Light Steel Framed Buildings.

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 Definitions

*Free ventilation area* refers to the unobstructed area of a ventilation opening.

*Job requirements* refer to specific requirements of the job at hand not covered by job specifications.

*Job specifications* refer to instructions (oral, written, graphic) and may include any of the following: manufacturer instructions; design drawing detail specifications; specifications from a specialist source such as an architect, designer, engineer, or a supervisor; and site or work specific requirements.

*Maintenance* may refer to all or any of – repair, upgrade, alter, remove, replace.

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

## 4 Range

Pipework may include but is not limited to – associated fittings and/or components; copper, galvanised mild steel, stainless steel, polyethylene, multi-layer systems;

Joining methods are determined according to the material being joined and may include but are not limited to – brazed, welded, tapered thread, press systems, crimp systems, compression type fitting, flange, electro-fusion.

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## Outcomes and performance criteria

### Outcome 1

Demonstrate knowledge of concepts and principles in terms of their application to the installation, commissioning, and maintenance of consumer gas pipework.

### Performance criteria

#### 1.1 Explain considerations regarding trade science and material properties in terms of their relationship to consumer gas pipework.

**Range**            trade science includes – electrical bonding, flow, friction, pressure loss, velocity;  
                          properties include – corrosion, expansion and contraction.

1.2 Describe what determines the selection of materials and methods of installation for consumer gas pipework.

Range job specifications, operation of the installed gas pipework; may include job requirements.

## Outcome 2

Demonstrate knowledge of determining consumer gas supply requirements.

### Performance criteria

2.1 Describe the verification process for gas supply in accordance with AS/NZS 5601.1:2013.

2.2 Calculate pipe size in accordance with job requirements and relevant standards and codes.

2.3 Calculate minimum free ventilation area for openings where concealed pipework passes through a void, duct or sleeve.

Range above ground, below ground.

2.4 Identify locations for consumer gas pipework.

Range prohibited, preferred.

## Outcome 3

Demonstrate knowledge of the installation, testing, and commissioning of consumer gas pipework.

Range AS/NZS 5601.1:2013, the Gas (Safety and Measurement) Regulations 2010, and job specifications.

### Performance criteria

3.1 Explain the installation of gas pipework including jointing methods, supports and their spacing, protection, and identification (when required).

Range for multi-layer systems includes provision of excess flow valve, transition and reversion fittings for proprietary systems.

3.2 Describe gas tightness tests for installations up to 30 litres in accordance with NZS 5601.1:2013 Appendix E.

Range includes processes for leakage detection and repair, and final connection methods.

3.3 Explain requirements to connect the installation to the gas supply.

3.4 Explain gas pipework purging processes and safety considerations to comply with 5601.1:2013 Appendix D.

Range up to 30 litres, above 30 litres.

**Outcome 4**

Demonstrate knowledge of the maintenance of consumer gas pipework.

**Performance criteria**

4.1 Describe methods of inspecting pipe and fittings to determine their physical condition and testing an installation for gas tightness.

4.2 Explain methods for identifying causes of faults and possible means of rectification.

Range must include but is not limited to – blockage, leaks, physical damage, corrosion, pipe-sizing.

**Outcome 5**

Describe regulatory requirements as applied to the installation, commissioning, and maintenance of consumer gas pipework.

**Performance criteria**

5.1 Describe how relevant sections of legislation, standards, and codes apply to the installation, testing, connecting, purging, and maintenance of consumer gas pipework.

<b>Replacement information</b>	This unit standard and unit standard 30716 replaced unit standard 2116.
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<b>Planned review date</b>	31 December 2029
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**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

<b>Consent and Moderation Requirements (CMR) reference</b>	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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**Comments on this unit standard**

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