

Title	Demonstrate knowledge of the installation and maintenance of ducting systems for warm air heating		
Level	3	Credits	3

Purpose	<p>This unit standard is for people who work, or intend to work, in the plumbing or gasfitting industries.</p> <p>People credited with this unit standard are able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> – ducting systems for warm air heating; – the maintenance of ducting and associated equipment for air heating and venting ; and – regulatory requirements, selection of methods and materials, and underpinning concepts and principles, as applied to the installation and maintenance of air heating and ventilation ducting and equipment.
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Classification	Plumbing, Gasfitting and Drainlaying > Core Plumbing, Gasfitting, and Drainlaying
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Available grade	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:
- Building Act 2004;
 - Health and Safety at Work Act 2015;
 - Plumbers, Gasfitters and Drainlayers Act 2006
 - Gas Act 1992;
 - Gas (Safety and Measurement) Regulations 2010.

The following standards, which are available at <http://www.standards.govt.nz>:
 AS/NZS 5601.1:2013 *Gas installations - Part 1: General installations*,
 NZS 3604:2011 *Timber-framed buildings*.

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 G4 Ventilation,
 New Zealand Building Code Clause G5 Interior Environment,
 New Zealand Building Code Clause G6 Airborne and Impact Sound;
 New Zealand Building Code Clause G11 Gas as an energy source.

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

2 Definitions

Ducting refers to any of prefabricated flexible ducting, semi-rigid ducting, and rigid ducting.

Ducting systems refers to ducting, together with associated equipment.

Job specifications refers 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, alteration, removal.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of ducting systems for warm air heating.

Performance criteria

1.1 Explain the function and purpose of ducting systems for air heating and venting.

Range warm air supply ducting, return air ducting.

1.2 Explain the differences between up flow, down flow, and horizontal flow systems.

1.3 Describe the function and purpose of the plenum, diffuser, register, filter, room temperature sensor, zone dampers, and common outlet in ducting systems for air heating and venting.

1.4 Describe the supports required for suspended warm air fittings and ducting.

Outcome 2

Demonstrate knowledge of the maintenance of ducting and associated equipment for air heating and venting

Range excludes heating source.

Performance criteria

2.1 Explain methods of assessing installed ducting and associated equipment to identify maintenance requirements.

2.2 Explain methods of inspecting the physical condition of duct and fittings to determine that the ducting system is intact.

2.3 Describe the causes of common faults and means of rectification.

Range may include but is not limited to – blockage, leaks, physical damage, corrosion.

2.4 Describe operational tests used to confirm faults have been correctly remedied.

Outcome 3

Demonstrate knowledge of regulatory requirements, selection of methods and materials, and underpinning concepts and principles, as applied to the installation and maintenance of air heating and ventilation ducting and equipment.

Performance criteria

3.1 Describe how relevant sections of legislation, standards, and codes apply to the installation and maintenance of air heating and ventilation ducting and equipment.

3.2 Justify the selection of methods and materials.

Range flexi duct, plastic fittings, sheet metal components, metal pipe, insulation material, sealing material.

3.3 Explain underpinning concepts and principles in terms of their application to the installation and maintenance of air heating and ventilation ducting and equipment.

Range airflow; noise control; positive, negative, and balanced air pressure; minimising heat losses.

Replacement information	This unit standard replaced unit standard 2157.
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Planned review date	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	26 October 2017	31 December 2028
Review	2	30 May 2024	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 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.