

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 in accordance with maintenance requirements and job specifications; 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 References

Building Act 2004;

Health and Safety at Work Act 2015;

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

AS/NZS 5601.1:2013 *Gas installations - Part 1: General installations*,

NZS 3604:1999 *Timber Framed Buildings*;

The following clauses, and any related compliance 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;

and all subsequent amendments and replacements.

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 – 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. Where job specifications are in conflict with applicable legislation, standards, and/or codes, such legislation, standards, and/or codes shall take precedence for the purpose of assessment. *Maintain* may refer to all or any of – repair, upgrade, alter, remove.

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 in accordance with maintenance requirements and job specifications.

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.

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.

Replacement information	This unit standard replaced unit standard 2157.
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Planned review date	31 December 2022
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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	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.