

Title	Demonstrate knowledge of foul water systems		
Level	4	Credits	9

Purpose	<p>This unit standard is for people who work in the plumbing industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> – the installation and supporting of foul water systems in buildings; and – regulatory requirements, processes, selection of methods and materials, and underpinning concepts and principles for the installation, supporting, and maintenance of foul water systems.
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Classification	Plumbing, Gasfitting and Drainlaying > Plumbing
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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;
 Building Regulations 1992;
 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 <https://www.standards.govt.nz>:
 AS/NZS 3500.2:2021 *Plumbing and drainage, Part 2: Sanitary plumbing and drainage*;
 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 G13 Foul Water.
 New Zealand Building Code Clause G14 Industrial Liquid Waste.

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

Foul water systems refer to systems for conveying foul water to the outside of the building without leakage, blockage, or allowing foul air to enter the building.

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. 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.

- 3 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 the installation and supporting of foul water systems in buildings.

Range Building Code Clause G13 – Foul Water, AS1 – Sanitary Plumbing, and AS3 – Plumbing and Drainage; single-level, multi-level.

Performance criteria

- 1.1 Describe suitable foul water systems to be installed in accordance with job specifications and regulatory requirements.

Range foul water systems includes but is not limited to – single level sanitary systems, single stack (including variations), fully vented, fully vented modified stack, elevated drainage principles.

- 1.2 Describe the performance and functional requirements as set out in the Building Code Clause G13.

- 1.3 Describe elements of foul water systems to meet requirements set out in the Building Code Clause G13.

Range elements include but are not limited to – sizing, venting, gradients, readily accessible access points.

- 1.4 Describe methods of jointing pipes in foul water systems, including pipes of different materials.

Range methods may include but are not limited to – solvent weld, brazed, fusion weld, rubber ring, press-fit, compression;
pipe materials may include but are not limited to – ABS, cast iron, copper, glass, lead, polypropylene, unplasticised polyvinylchloride (uPVC), polyethylene, stainless steel, includes associated fittings;
evidence is required for three materials and three methods.

- 1.5 Explain the requirements for supporting foul water pipework in accordance with job specifications and regulatory requirements.

- 1.6 Describe appropriate soundness tests for foul water systems.

- 1.7 Describe appropriate means of protecting system components.

Range system components includes but is not limited to – allowance for movement (expansion, contraction, seismic activity), traffic, freezing, heating, acoustic insulation.

- 1.8 Explain the requirements to identify system pipelines by system and/or colour and direction of flow.

Outcome 2

Demonstrate knowledge of regulatory requirements, processes, selection of methods and materials, and underpinning concepts and principles for the installation, supporting, and maintenance of foul water systems.

Performance criteria

- 2.1 Describe applicable sections of legislation, standards, and codes in terms of their application to the installation, supporting, and maintenance of foul water systems.

- 2.2 Describe processes for identifying and confirming non-compliant foul water installations and communicating required changes to consumer.

- 2.3 Justify selection of methods and materials.

Range job specifications, operation of the installed system and components, suitability and durability of materials.

- 2.4 Explain the application of underpinning concepts and principles to the installation, supporting, and maintenance of foul water systems.

Range application includes but is not limited to - atmospheric pressure, allowance for movement (expansion, contraction, seismic activity), flow of water in stacks, hydraulic jump, loss of water seal, acoustics, venting, gradient.

2.5 Describe maintenance requirements of foul water systems.

Range access points, fault rectification, preventative maintenance.

Replacement information	This unit standard, unit standard 30543, and unit standard 30544 replaced unit standard 2144.
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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.