

Title	Install and maintain water mains and water supply systems		
Level	4	Credits	4

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:</p> <ul style="list-style-type: none"> – install and commission water main; – install water supply systems and reticulation; and – maintain water mains and water supply systems and reticulation.
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Classification	Plumbing, Gasfitting and Drainlaying > Plumbing
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Available grade	Achieved
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Guidance Information

- 1 References

Building Act 2004;
Health Act 1956;
Health and Safety at Work Act 2015;
Plumbers, Gasfitters, and Drainlayers Act 2006;
Plumbers, Gasfitters, and Drainlayers Regulations 2010;
Water Supplies Protection Regulations 1961;
The following standards, which are available at <http://www.standards.govt.nz>:
AS/NZS 3500.1:2015 *Plumbing and drainage – Part 1: Water services*,
NZS 3604:2011 *Timber-framed buildings*,
NZS 4302:1987 *Code of practice for the control of hygiene in air and water systems in buildings*,
NZS 5807:1980 *Code of practice for industrial identification by colour, wording or other coding*;
The following clauses, and any related compliance documents, which are available at <https://www.building.govt.nz/>:
New Zealand Building Code Clause G10 Piped Services,
New Zealand Building Code Clause G12 Water Supplies;
and all subsequent amendments and replacements.
- 2 This unit standard relates to both reticulated network authority mains and self-contained water supply systems. Self-contained water supply systems may refer to private water collection or bore and distribution systems.
- 3 This unit standard requires the application of theory as included in the Plumbers, Gasfitters, and Drainlayers Regulations 2010.

- 4 Credit for this unit standard does not entitle the candidate to legally perform certain electrical aspects of this work unless registered or supervised by a registered person under the provisions of the Electricity Act 1992.
- 5 Range
jointing – three of compression flange, electro fusion weld, fusion weld, couplings (gibault type), glued, RRJ push fit, threaded, hard solder (brazing);
pipe materials – one of MDPE polyethylene, uPVC, copper;
water mains fittings – three of hydrants, isolation valves, meters, branches, saddle tapping, other fittings;
water mains structures – anchor blocks, thrust blocks.
- 6 Assessment against installation of water main structure/s may be carried out using simulation.
- 7 Definitions
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.
Other services – any existing installed services.
Water mains refers to water mains and associated fittings and structures.
Water supply systems and reticulation refers to water collection, storage, and distribution pipework to buildings, and to metering equipment.
- 8 Candidates must hold a current limited certificate or exemption under supervision as issued under the Plumbers, Gasfitters, and Drainlayers Act 2006.
- 9 Recommended skills and knowledge for the unit standard: Unit 30532, *Demonstrate knowledge of excavating and trenching for plumbing, gasfitting, or drainlaying*.
- 10 All practical activities are to be carried out in a way that avoids harm to people and damage to property, environment, other services, materials, tools, and equipment.

Outcomes and performance criteria

Outcome 1

Install and commission water mains.

Performance criteria

- 1.1 Construct water main and install associated fittings in accordance with job specifications.
- 1.2 Install water main and associated fittings and connect them to connections and discharge points in accordance with job specifications.

- 1.3 Backfill in a way to prevent damage to installed components.
- 1.4 Commission water main and associated fittings to ensure they operate to design function.

Outcome 2

Install water supply systems and reticulation.

Performance criteria

- 2.1 Install water supply systems in accordance with job specifications and relevant standards and codes.
- 2.2 Connect water supply systems to connection and termination points in accordance with job specifications and relevant standards and codes.
- 2.3 Test water supply systems for soundness in accordance with job specifications and relevant standards and codes. Complete relevant commissioning tests and reporting.

Range reporting may include but is not limited to – photographic evidence, as-built plans.
- 2.4 Install water supply systems to prevent contamination and/or damage to the system.
- 2.5 Backfill in a way to prevents damage to installed components.

Outcome 3

Maintain water mains and water supply systems and reticulation.

Performance criteria

- 3.1 Identify faults in terms of causes and means of rectification.
- 3.2 Rectify faults in accordance with maintenance requirements, job specifications, and relevant standards and codes.

Replacement information	This unit standard and unit standard 30614 replaced unit standard 23849.
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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.