

Title	Demonstrate knowledge of the installation and maintenance of rainwater handling and harvesting systems		
Level	4	Credits	4

Purpose	<p>This unit standard is for people who work, or intend to work, in the plumbing industry.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – describe the selection, installation, and maintenance of rainwater handling systems; – describe how to determine the runoff and ensure performance for roof and rainwater handling systems; – describe the installation and maintenance of rainwater harvesting systems; and – demonstrate knowledge of regulatory requirements, selection of methods and materials, and underpinning concepts and principles, as applied to the installation of rainwater handling and harvesting 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;
 - Health and Safety at Work Act 2015;
 - Water Services Act 2021;
 - Water Services (Drinking Water Standards for New Zealand) Regulations 2022;
 - Drinking Water Acceptable Solution for Roof Water Supplies - available at [Acceptable Solutions | Taumata Arowai](#).

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

- AS/NZS 3500.1:2021 *Plumbing and drainage, Part 1: Water services*;
- AS/NZS 3500.3:2021 *Plumbing and drainage, Part 3: Stormwater 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 E1 Surface Water;
- New Zealand Building Code Clause E2 External Moisture;
- New Zealand Building Code Clause G12 Water Supplies.

New Zealand Metal Roof and Wall Cladding Code of Practice (as relevant to roofing), available at <http://www.metalroofing.org.nz>.

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

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.

Pre-treatment systems may include – first flush diverter, leaf diverter, debris screens.

- 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

Describe the selection, installation, and maintenance of rainwater handling systems.

Range gutters, spouting, downpipes (internal and external), valleys, rainheads, overflows.

Performance criteria

- 1.1 Describe different rainwater handling systems and their components.
- 1.2 Describe the selection and installation of rainwater handling systems in accordance with design detail specifications and relevant codes.
- 1.3 Describe the maintenance of rainwater handling systems in accordance with design detail specifications, manufacturer instructions, and relevant codes.

Outcome 2

Describe how to determine the runoff and ensure performance for roof and rainwater handling systems.

Performance criteria

- 2.1 Describe how to use flow calculations to determine rainwater runoff for roof and rainwater handling systems.

- 2.2 Describe how to determine correct size components for rainwater handling systems for compliance with the New Zealand Building Code Clause E1 and E2.

Range size of gutters, downpipes, and overflows.

Outcome 3

Describe the installation and maintenance of rainwater harvesting systems.

Performance criteria

- 3.1 Describe health and safety considerations to be observed when using a rainwater harvesting system for household supply.

Range – potable, non-potable.

- 3.2 Describe the components of a rainwater harvesting system and their positioning.

Range pre-treatment systems, roofing materials, downpipes, overflows, filtration, pumping, storage tanks.

- 3.3 Describe the maintenance of rainwater harvesting systems in accordance with design detail specifications, manufacturer instructions, and relevant codes.

Outcome 4

Demonstrate knowledge of regulatory requirements, selection of methods and materials, and underpinning concepts and principles, as applied to the installation of rainwater handling and harvesting systems.

Performance criteria

- 4.1 Describe applicable sections of legislation, standards, and codes in terms of their application to the installation of rainwater handling and harvesting systems.

- 4.2 Justify selection of methods and materials.

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

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 Waihangara Rau Construction and Infrastructure Workforce Development Council qualifications@waihangaraarau.nz if you wish to suggest changes to the content of this unit standard.