

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 References

Building Act 2004;
 Health and Safety at Work Act 2015;
 NZS 3604:2011 *Timber framed buildings*, available at <https://www.standards.govt.nz>;
 The following clauses, current versions, and any related compliance 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;
 NZMRM Code of Practice (as relevant to roofing), available at <http://www.metalroofing.org.nz>;
 and all subsequent amendments and replacements.
- 2 Definitions

Job requirements – specific requirements of the job at hand not covered by job specifications.
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.

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, rainwater harvesting, 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 according to New Zealand Building Code E1 AS1.

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

Range first flush diverters, 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, prudent use and longevity of materials; may include job requirements.

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.