

Title	Demonstrate knowledge of the installation and maintenance of stormwater handling systems		
Level	4	Credits	9

Purpose	<p>This unit standard is for people who work, or intend to work, in the drainlaying industry.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of concepts and principles underpinning the installation and maintenance of stormwater handling systems; – describe positioning for installation of stormwater handling systems; – describe the installation of stormwater handling systems; and – describe the maintenance of stormwater handling systems.
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Classification	Plumbing, Gasfitting and Drainlaying > 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;
 Plumbers, Gasfitters, and Drainlayers Act 2006;
 Plumbers, Gasfitters, and Drainlayers Regulations 2010;
 Resource Management Act 1991;
 The following standard, which is available at <https://www.standards.govt.nz>:
 AS/NZS 3500.3:2015 *Plumbing and drainage – stormwater*;
 The following guides, which are available at <http://www.worksafe.govt.nz/worksafe>:
Good practice guidelines – Excavation safety, Wellington: WorkSafe New Zealand, 2016
Guide for Safety with Underground Services, Wellington: Department of Labour, 2002;
 The following clause, current version, and any related compliance documents, which are available at <https://www.building.govt.nz>:
 New Zealand Building Code Clause E1 Surface Water;
 and all subsequent amendments and replacements.

2 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.

Stormwater handling systems – drainage systems for the disposal of stormwater that will be constructed to convey surface water to an appropriate fall, using gravity flow where possible, and include:

surface water intake and outfall structures – pre-cast and in-situ;

surface water collection systems – pre-cast concrete, in-situ, open drains, kerbs, and channels;

sub-soil systems – to capture and redirect subsurface water;

sumps – which include silt traps.

- 3 All demonstration of knowledge must be in accordance with the Building Act 2004 and other relevant legislation, and relevant codes and Standards.
- 4 All practical activities are to be carried out in a way that avoids harm to people and damage to property, environment, existing installed services, materials, tools, and equipment.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of concepts and principles underpinning the installation and maintenance of stormwater handling systems.

Performance criteria

- 1.1 Describe relevant sections of legislation, standards, and codes in terms of their application to the installation of stormwater handling systems.
- 1.2 Explain underpinning concepts and principles in terms of their application to the installation and maintenance of surface water intake and outfall structures.

Range flow, velocity, volume.
- 1.3 Explain common elements of intake and outfall structures such as grills, baffles, corbels, and purpose of shapes of structures.
- 1.4 Explain concepts underlying installation and maintenance of collection systems.

Range collection area, characteristics of surface, contour.
- 1.5 Explain underpinning concepts and principles in terms of their application to the installation and maintenance of sumps.

Range Type one surface water sump, Type two surface water sump, bubble up sump.

- 1.6 Explain underpinning concepts and principles in terms of their application to the installation of sub-soil drainage.

Range soakage, soil properties, impact on soil moisture regime.

Outcome 2

Describe positioning for installation of stormwater handling systems.

Performance criteria

- 2.1 Describe how surface water intake and outfall structures are positioned to measurements in accordance with job specifications.
- 2.2 Describe how surface water collection systems are positioned to measurements in accordance with job specifications.
- 2.3 Describe how sumps are positioned to measurements in accordance with job specifications.
- 2.4 Describe how sub-soil drains are positioned to measurements in accordance with job specifications.

Outcome 3

Describe the installation of stormwater handling systems.

Performance criteria

- 3.1 Describe the installation of surface water intake and outfall structures in accordance with job specifications.
- 3.2 Describe the installation of surface water collection systems in accordance with job specifications.
- 3.3 Describe the installation of sumps in accordance with job specifications.
- 3.4 Describe the installation of sub-soil drains in accordance with job specifications.

Outcome 4

Describe the maintenance of stormwater handling systems.

Performance criteria

- 4.1 Describe how to identify system faults in terms of causes and means of rectification.
- 4.2 Describe the rectification of faults in accordance with maintenance requirements, job specifications, and relevant Standards and codes.

Replacement information	This unit standard, unit standard 30578, and unit standard 30579 replaced unit standard 1100, unit standard 1104, unit standard 1108, and unit standard 1109.
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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	28 September 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.