

Title	Demonstrate knowledge of wastewater and stormwater networks, their materials and fittings, and techniques used for them		
Level	3	Credits	8

Purpose	People credited with this unit standard are able to demonstrate knowledge of wastewater and stormwater networks, and materials, fittings, and techniques used for wastewater and stormwater networks.
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Classification	Infrastructure Works > Pipeline Construction and Maintenance
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Available grade	Achieved
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Guidance Information

- 1 Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable legislative and industry requirements.
- 2 Legislation relevant to this unit standard includes: Health and Safety at Work Act 2015 and any subsequent amendments.
- 3 Definitions
Industry requirements refer to policies, processes, methodologies, industry codes of practice, site specific health and safety plans, standard operating procedures, site safety plans, quality plans, work plans, traffic management plans, contract work programmes, job safety analysis, safe work method statements, job instructions, manufacturer's requirements, contract specifications, manuals, procedural documents, Waka Kotahi New Zealand Transport Agency specifications and guidelines.
Stormwater may include open channels, ponds, or gardens.
Wastewater may include domestic wastewater, trade wastewater, or other sewerage systems.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of wastewater and stormwater networks.

Performance criteria

- 1.1 Composition of wastewater and stormwater and their effects on the environment are described.

- 1.2 Wastewater and stormwater networks are described in terms of their purpose.
- 1.3 Components of wastewater and stormwater networks are described in terms of their purpose and function.
- Range components include – pipelines, manholes, valves, pumps, controls, outfalls, treatment plants.
- 1.4 Hydraulics of wastewater and stormwater networks are explained in terms of causes and impacts of flow rate changes.
- 1.5 Factors that affect system performance are explained in terms of their causes, effects, and prevention.
- Range inflow, infiltration, exfiltration, pipe blockage.

Outcome 2

Demonstrate knowledge of materials, fittings, and techniques used for wastewater and stormwater networks.

Performance criteria

- 2.1 Types of wastewater and stormwater pipe are described in terms of their features, handling, fittings, jointing requirements, and uses.
- Range concrete, polyvinyl chloride (PVC), polyethylene (PE), acrylonitrile-butadiene-styrene (ABS), stainless steel, ceramic, concrete-lined steel, ductile iron, glass fibre reinforced epoxy or plastic (GRE/P), earthenware.
- 2.2 Types of pipe that may be encountered in older wastewater and stormwater networks are described in terms of their maintenance requirements.
- Range brick, cast iron, earthenware, asbestos.
- 2.3 Fittings for jointing pipes to structures are described.
- Range structures include – access chambers, sumps.
- 2.4 Rehabilitation and replacement of pipes are described.
- Range rehabilitation includes – sleeving, lining, pipe bursting; replacement includes – online, off-line.
- 2.5 Flow management techniques when working on a live wastewater or stormwater system are described.
- Range bypass pumping, bypass channel, overflow management, silt removal or control.

- 2.6 Techniques to dispose of contaminated debris and manage spills and overflow are described.

Replacement information	This unit standard and unit standard 32815 replaced unit standard 31450 and unit standard 31451.
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Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 August 2021	N/A

Consent and Moderation Requirements (CMR) reference	0101
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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 Connexis - Infrastructure Industry Training Organisation qualifications@connexis.org.nz if you wish to suggest changes to the content of this unit standard.