

Title	Demonstrate knowledge of drinking-water networks, and materials, fittings, and techniques used for them		
Level	3	Credits	8

Purpose	People credited with this unit standard are able to demonstrate knowledge of: drinking-water networks, and materials, fittings, and techniques used for drinking-water 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 **Definition**
Industry requirements refer to relevant 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.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of drinking-water networks.

Performance criteria

- 1.1 Drinking-water networks are described in terms of their purpose, public health considerations, and the impacts of low water quality.

- 1.2 Components of drinking-water networks are explained in terms of their purpose, function, and security.
- Range components include – Intakes, pipelines, valves, pumps, reservoirs, controls, treatment plants.
- 1.3 Hydraulics of drinking-water networks are explained in terms of pressure, the causes and impact of flow rate changes, and the role of pumps and reservoirs.
- 1.4 Quality control operations for drinking-water networks are described.
- 1.5 Internal and external causes of pipe failure are explained in terms of their effects and prevention.

Outcome 2

Demonstrate knowledge of materials, fittings, and techniques used for drinking-water networks.

Performance criteria

- 2.1 Standard classes of water supply pipes are described in terms of their features, jointing requirements, and pressure testing requirements.
- Range concrete, polyvinyl chloride (PVC), polyethylene (PE), stainless steel, concrete-lined steel, ductile iron, glass fibre reinforced epoxy or plastic (GRE/P).
- 2.2 Types of pipe that may be encountered in older drinking-water networks are described in terms of their maintenance requirements.
- Range cast iron, asbestos, concrete lined steel, steel, glass fibre reinforced epoxy or plastic (GRE/P).
- 2.3 Fittings for drinking-water mains are described in terms of their purpose, function, and suitability for specific applications.
- Range valves, hydrants, water meters, thrust blocks.
- 2.4 Rehabilitation and replacement techniques for pipes are described in terms of their requirements and procedures.
- Range two rehabilitation techniques, two replacement techniques.
- 2.5 Techniques for leak detection and resolution are described.
- 2.6 Safety and procedures when excavating to work on drinking-water networks are described.
- 2.7 Shutting down and recommissioning a drinking-water network is described in terms of procedures and pressure testing requirements.

2.8 Disinfection of a drinking-water network is described.

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.