

<b>Title</b>	<b>Demonstrate knowledge of the installation and maintenance of foulwater drains</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	<p>This unit standard is for people who work in the drainlaying industry.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> <li>– demonstrate knowledge of concepts, principles, and regulatory requirements underpinning the installation of foulwater drains;</li> <li>– demonstrate knowledge of the purpose, operation, and maintenance of sewer gas interceptor traps; and</li> <li>– describe materials, pipework, and fittings relevant to drainlaying.</li> </ul>
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<b>Classification</b>	Plumbing, Gasfitting and Drainlaying > Drainlaying
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<b>Available grade</b>	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:
- Plumbers, Gasfitters, and Drainlayers Act 2006;
  - Health and Safety at Work Act 2015;
  - Building Act 2004;
  - New Zealand Building Code (Building Regulations 1992 – Schedule 1);
  - Resource Management Act 1991;
  - Plumbers, Gasfitters, and Drainlayers Regulations 2010.

The following standards, which are available at <http://www.standards.govt.nz>:  
 AS/NZS 1547:2012 *On-site domestic wastewater management*;  
 AS/NZS 1546.1:2008 *On-site domestic wastewater treatment units – Septic tanks*;  
 AS/NZS 3500.2:2021 *Plumbing and drainage Part 2: Sanitary plumbing and drainage*.

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 B2 Durability;  
 New Zealand Building Code Clause G13 Foul Water.

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

*Access point* refers to a place where access may be made to a drain or discharge pipe for inspection, cleaning or maintenance, and includes inspection point, rodding point, and cleaning eye.

*Inspection point* refers to a removable cap at drain level through which access may be made for cleaning and inspecting the drainage system.

*Rodding point* refers to a removable cap at ground level through which access may be made for cleaning or inspecting the drainage system.

*Cleaning eye* refers to a small diameter access point.

*Job specifications* for the purposes of this unit standard, refer to instructions (oral, written, graphic) and may include any of the following – manufacturers' 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.

*Sewer gas interceptor trap* refers to a boundary trap or buchan trap.

- 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

Demonstrate knowledge of concepts, principles, and regulatory requirements underpinning the installation of foulwater drains.

### Performance criteria

- 1.1 Describe relevant sections of Acts, Regulations, Building Code Acceptable Solutions and Verification Methods, referenced standards, and codes in terms of their application to the installation of foulwater drains.
- 1.2 Explain the application of underpinning concepts and principles to the installation of foulwater drains.
- Range includes but is not limited to – gradient and sizing, venting, bedding/support, coverage and protection, material selection, overflow relief, approved outfall, prevention of blockages.
- 1.3 Explain the purpose, features, and requirements of access points, other than inspection chambers.
- Range inspection points, rodding points, cleaning eyes.

- 1.4 Describe types of access points that are appropriate for different purposes, and their positioning in the drainage pipework system.
- 1.5 Describe the purpose of thrust/anchor and anti-scour blocks in a drainage system.
- 1.6 Explain methods of conducting watertightness tests of different types of drainage systems in accordance with legislative requirements.
- 1.7 Describe precautions and procedures to be adopted with pipes conveying potentially hazardous materials.

Range may include but is not limited to – foul water, hot water, corrosive liquid, petrol/oil/lubricants.

## Outcome 2

Demonstrate knowledge of the purpose, operation, and maintenance of sewer gas interceptor traps.

### Performance criteria

- 2.1 Describe reasons for the installation of sewer gas interceptor traps.
- 2.2 Describe location, components, and operation of sewer gas interceptor traps.
- 2.3 Explain diagnosis processes for faults in sewer gas interceptor traps.
- 2.4 Explain processes for the maintenance and removal of sewer gas interceptor traps.

## Outcome 3

Describe materials, pipework, and fittings relevant to drainlaying.

Range pipework includes pipes and associated fittings.

### Performance criteria

- 3.1 Describe situations in which various types of new pipe and pipework would be used.

Range pipework may include – uPVC, polyethylene, earthenware, concrete, steel.

- 3.2 Describe environments in which different types of existing pipework materials would be found.

Range pipework may include – uPVC, polyethylene, earthenware, concrete, steel, asbestos or other hazardous material, cast iron, copper, brass.

3.3 Describe a situation where the rehabilitation/lining of an existing foulwater drain would be appropriate.

Range includes but is not limited to – cured-in-place pipe lining, pipe bursting, slip lining.

3.4 Describe the characteristics of different types of pipes according to the material of which they are constructed.

Range pipes may include – uPVC, polyethylene, earthenware, concrete, steel, ABS;  
characteristics may include - durability, rigidity/flexibility, load bearing capacity.

3.5 Describe jointing methods appropriate for the materials being joined, including the jointing of pipes of different materials.

Range band clamped sleeve, plaster and/or epoxy mortar (epoxy resin), compression, glue and/or solvent cement and/or solvent weld, electrofusion weld, rubber ring.

3.6 Describe methods and requirements for the protection of pipework prior to covering.

3.7 Describe precautions and procedures to be adopted with potentially hazardous materials.

Range includes but is not limited to – asbestos, concrete dust, cement, solvent fumes.

<b>Replacement information</b>	This unit standard and unit standard 30531 replaced unit standard 1114, unit standard 1115, unit standard 1117, and unit standard 27336.
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<b>Planned review date</b>	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	28 September 2017	31 December 2028
Review	2	30 May 2024	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

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**Comments on this unit standard**

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council [qualifications@waihangaararau.nz](mailto:qualifications@waihangaararau.nz) if you wish to suggest changes to the content of this unit standard.