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| Title | Excavate and trench for plumbing, gasfitting, or drainlaying | | |
| Level | 3 | Credits | 9 |

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| Purpose | <p>This unit standard is for people who work in the plumbing, gasfitting, or drainlaying industries.</p> <p>People credited with this unit standard are able to: determine the position of the trench; remove the surface material; excavate the spoil and identify stable sub-base; shore the excavation; explain excavation dewatering; carry out backfilling and clear the site; demonstrate Notifiable Work procedures for excavation and trenching; work safely and with care; and demonstrate knowledge of principles underpinning excavation and trenching for plumbing, gasfitting, or drainlaying.</p> |
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| Classification | Plumbing, Gasfitting and Drainlaying > Core Plumbing, Gasfitting, and Drainlaying |
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| Available grade | Achieved |
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| Entry information | |
| Critical health and safety prerequisites | Candidates who are working within the jurisdiction of the Plumbers, Gasfitters and Drainlayers Board must hold a current drainlaying limited certificate or exemption for drainlaying under as issued under the Plumbers, Gasfitters and Drainlayers Act 2006. |
| Recommended skills and knowledge | Unit 1122, <i>Establish line, level, and gradient for plumbing or drainlaying</i> , or demonstrate equivalent knowledge and skills. |

Explanatory notes

- Legislation, standards, codes, and guides applicable to this unit standard include but are not limited to:
 - Plumbers, Gasfitters, and Drainlayers Act 2006
 - Health and Safety in Employment Act 1992
 - Building Act 2004
 - Health Act 1956
 - Resource Management Act 1991
 - Plumbers, Gasfitters, and Drainlayers Regulations 2010
 - AS/NZS 1547:2000 *On-site domestic wastewater management* (available at <http://www.standards.co.nz>)

AS/NZS 1546.1:2008 *On-site domestic wastewater treatment units – Septic tanks* (available at <http://www.standards.co.nz>)

AS/NZS 3500.2:2003 *Plumbing and drainage – Sanitary plumbing and drainage* (available at <http://www.standards.co.nz>)

Approved Code of Practice for Safety in Excavation and Shafts for Foundations (Wellington: Department of Labour, 1995) (available at <http://www.osh.govt.nz/order/catalogue>)

Guide for Safety with Underground Services (Wellington: Department of Labour, 2002) (available at <http://www.osh.govt.nz/order/catalogue>)

New Zealand Building Code Clause E1 Surface Water and any related compliance documents (available at <http://www.dbh.govt.nz>)

New Zealand Building Code Clause G12 Water Supplies and any related compliance documents (available at <http://www.dbh.govt.nz>)

New Zealand Building Code Clause G13 Foul Water and any related compliance documents (available at <http://www.dbh.govt.nz>).

Any legislation, standard, code, or guide superseding any of the above will apply, pending review of this unit standard.

2 Definitions

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. 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.

Notifiable Work is as defined in *A Guide to the Health and Safety in Employment Act 1992* (Wellington: Department of Labour, 2003) available at <http://www.osh.govt.nz/order/catalogue>.

OSH refers to the Occupational Safety and Health Service of the Department of Labour.

Other services, for the purposes of this unit standard, refer to any existing installed services such as water, gas, electricity, or telephone network cables.

Outcomes and evidence requirements

Outcome 1

Determine the position of the trench.

Evidence requirements

- 1.1 Line, and gradient as applicable, are positioned to measurements in accordance with job specifications.
- 1.2 Other services are located, avoided, and protected in accordance with the owning utility operator's working practice.
- 1.3 Other services are identified by label and/or colour in accordance with job specifications and relevant standards and codes.

1.4 Any obstructions are avoided or removed.

Outcome 2

Remove the surface material.

Evidence requirements

2.1 Surface material is removed in accordance with job specifications.

Outcome 3

Excavate the spoil and identify stable sub-base.

Evidence requirements

3.1 Volumes, distances, depths, and diameters are measured and calculated in accordance with job specifications.

3.2 Soil is excavated in accordance with calculations.

3.3 Stable sub-base is identified in accordance with visual assessment and job specifications.

Outcome 4

Shore the excavation.

Evidence requirements

4.1 Excavation is shored in accordance with job specifications and relevant standards and codes.

Outcome 5

Explain excavation dewatering.

Evidence requirements

5.1 Installation of equipment is explained in accordance with job specifications.

Range surface pumps, submersible pumps.

5.2 Operation of equipment is explained in accordance with the size of the trench, the amount and rate of water to be removed, and job specifications.

Range surface pumps, submersible pumps.

5.3 The dewatering process using well pointing is explained in accordance with the size of the trench, the amount of water to be removed, and job specifications.

Outcome 6

Carry out backfilling and clear the site.

Evidence requirements

- 6.1 Site is backfilled, and compacted as necessary, in accordance with job specifications.
- 6.2 Site is cleared of construction debris and working equipment.

Outcome 7

Demonstrate Notifiable Work procedures for excavation and trenching.

Evidence requirements

- 7.1 Notifiable Work procedures are demonstrated in accordance with OSH requirements.

Outcome 8

Work safely and with care.

Evidence requirements

- 8.1 Practical activities are carried out avoiding harm to people and damage to property, other services, materials, tools, and equipment.

Outcome 9

Demonstrate knowledge of concepts and principles underpinning excavation and trenching for plumbing, gasfitting or drainlaying.

Evidence requirements

- 9.1 Underpinning concepts and principles are explained in terms of their application to excavating and trenching for plumbing, gasfitting, or drainlaying.

Range slippage, scouring, soil properties.

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| Replacement information | This unit standard and unit standard 1122 were replaced by unit standard 30532 and unit standard 30533. |
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

| Process | Version | Date | Last Date for Assessment |
|--------------|---------|-------------------|--------------------------|
| Registration | 1 | 31 January 1994 | 31 December 2022 |
| Revision | 2 | 19 June 1996 | 31 December 2022 |
| Revision | 3 | 3 April 1997 | 31 December 2022 |
| Review | 4 | 25 October 2007 | 31 December 2022 |
| Review | 5 | 15 March 2012 | 31 December 2022 |
| Review | 6 | 28 September 2017 | 31 December 2022 |

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| 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>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is expiring