



Australian Government

Department of Education, Employment and Workplace Relations

CPCCCM2002A Carry out excavation

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to undertake hand excavation tasks and excavations requiring the assistance of plant machinery to form excavations for footings, and the provision of services. It includes excavation to new and existing sites, and new services or the diversion of existing services.

Application of the Unit

Application of the unit

This unit of competency supports achievement of skills to safely and efficiently undertake basic excavation on a construction site, which includes working with others and as a member of a team.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units

CPCCOHS2001A

Apply OHS requirements, policies and procedures in the construction industry

Employability Skills Information

Employability skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare.	<p>1.1. Work instructions and operational details are obtained, confirmed and applied from relevant information for planning and preparation.</p> <p>1.2. Safety (OHS) requirements are followed in accordance with safety plans and policies.</p> <p>1.3. Signage and barricade requirements are identified and implemented.</p> <p>1.4. Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement.</p> <p>1.5. Material quantity requirements are calculated in accordance with plans and specifications.</p> <p>1.6. Materials appropriate to the work application and quality requirements are identified, obtained, prepared, safely handled and located ready for use.</p> <p>1.7. Environmental requirements are identified for the project in accordance with environmental plans and statutory and regulatory authority obligations, and are applied.</p>
2. Locate excavation site and erect safety equipment.	<p>2.1. Excavation route is located, and line and depth are established from site plans and instructions.</p> <p>2.2. Site pegs/profiles are used to identify service markers and to set out service points and the excavation limits are marked.</p> <p>2.3. Safety barricades and signs appropriate to the project are erected in positions as required by site safety plan.</p> <p>2.4. Temporary drainage system is established to divert surface and sub-surface water from excavation.</p> <p>2.5. Service markers or taped areas are identified and damage or interference with underground services avoided.</p>
3. Dig excavations.	<p>3.1. Excavations are safely dug with hand tools to ensure correct route, line and depth, and that procedures are used to minimise risk to self and others.</p> <p>3.2. Machine operator is assisted with excavation to ensure correct route, line and depth, and that correct procedures are used to minimise risk to self and others.</p> <p>3.3. Trench/excavation support is installed where</p>

ELEMENT	PERFORMANCE CRITERIA
4. Clean up.	<p>specified by job specifications and regulations.</p> <p>3.4. Excavation is cleaned free from loose material with hand tools and according to job requirements and instructions.</p> <p>4.1. Work area is cleared and materials disposed of, reused or recycled in accordance with legislation, regulations, codes of practice and job specification.</p> <p>4.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and standard work practices.</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills for this unit are:

- communication skills to:
 - assist machine operator
 - determine requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - follow instructions
 - read and interpret:
 - documentation from a variety of sources
 - drawings and specifications
 - report faults
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- identifying and accurately reporting to appropriate personnel any faults in tools, equipment or materials
- numeracy skills to apply measurements and make calculations
- organisational skills, including the ability to plan and set out work
- teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental

REQUIRED SKILLS AND KNOWLEDGE

abilities

- technological skills to:
 - use a range of mobile technology, such as two-way radio and mobile phones
 - voice and hand signals to access and understand site-specific instructions.

Required knowledge

Required knowledge for this unit is:

- commonly used in-ground services and identification by relevant markers
- construction terminology
- excavation materials
- excavation techniques
- job safety analysis (JSA) and safe work method statements
- material safety data sheets (MSDS)
- materials storage and environmentally friendly waste management
- plans, specifications and drawings
- processes for the calculation of material requirements
- quality requirements
- regulatory requirements for excavation support for safe access
- safe work with common plant used on construction industry sites
- types, characteristics, uses and limitations of tools and equipment
- workplace and equipment safety requirements.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment, provided that simulated or project-based assessment techniques fully replicate construction workplace conditions, materials, activities, responsibilities and procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of the ability to:

- locate, interpret and apply relevant information, standards and specifications
- comply with site safety plan and OHS legislation, regulations and codes of practice applicable to workplace operations
- comply with organisational policies and procedures, including quality requirements
- safely and effectively use tools, plant and equipment
- communicate and work effectively and safely with others
- determine from an existing set out, a mark out and then excavate site as part of an overall project to job specifications without damaging services.

Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the mandatory task requirements

EVIDENCE GUIDE

- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry related systems information.

Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.

Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete

EVIDENCE GUIDE

confidence in the person's demonstrated ability and applied knowledge

- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Information includes:

- diagrams or sketches
- instructions issued by authorised organisational or external personnel
- manufacturer specifications and instructions where specified
- maps
- memos
- MSDS
- organisation work specifications and requirements
- plans and specifications
- regulatory and legislative requirements pertaining to carrying out excavations
- relevant Australian standards

RANGE STATEMENT

Planning and preparation include:

Safety (OHS) is to be in accordance with legislation, regulations, codes of practice, organisational safety policies and procedures, and project safety plan and may include:

Tools and equipment include:

- safe work procedures related to carrying out excavations
- signage
- verbal or written and graphical instructions
- work bulletins
- work schedules.
- work site inspection
- equipment defect identification
- assessment of conditions and hazards
- determination of work requirements.
- emergency procedures, including extinguishing fires, organisational first aid requirements and evacuation
- handling of materials
- hazard control
- hazardous materials and substances
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
 - earth leakage boxes
 - lighting
 - power cables, including overhead service trays, cables and conduits
 - restricted access barriers
 - surrounding structures
 - traffic control
 - trip hazards
 - work site visitors and the public
 - working at heights
 - working in confined spaces
 - working in proximity to others
 - working with dangerous materials
- organisational first aid
- personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices
- use of firefighting equipment
- use of tools and equipment
- workplace environment and safety.
- automatic levels

RANGE STATEMENT

- brooms
 - buckets
 - crow bars
 - hammers
 - hoses
 - laser levels
 - levels
 - measuring tapes and rules
 - picks
 - profiles
 - saws
 - set out pegs
 - shovels
 - staff
 - straight edges
 - string lines
 - wheelbarrows.
- Materials** include:
- nails
 - pegs
 - sheet material shoring (timber and metal)
 - timber.
- Quality requirements** include relevant regulations, including:
- Australian standards
 - internal company quality policy and standards
 - manufacturer specifications, where specified
 - workplace operations and procedures.
- Environmental requirements** include:
- clean-up management
 - noise and dust
 - vibration
 - waste management.
- Statutory and regulatory authorities** include:
- federal, state and local authorities administering applicable Acts, regulations and codes of practice.
- Set out** includes:
- identification of services that can be damaged or impede excavation
 - marking out of the project.
- Excavations** include:
- extension of existing structures, to provide provisions for new services and to modify or repair existing services
 - provisions for footings/slabs to new structures
 - shoring (timber, metal or piling)

RANGE STATEMENT

- those being undertaken on sloping ground, flat ground, wet ground, dry ground, loose ground or any type of foundation material, with mechanical assistance possibly required for rock
- trench/excavation support using sheet material.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

Functional area

Functional area