Australian Government

Department of Education, Employment and Workplace Relations

ICTCBL3018A Install underground enclosures and conduit

Release: 1

ICTCBL3018A Install underground enclosures and conduit

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to install underground enclosures and conduit for new or cable maintenance tasks in access networks or customer premises. Assessment by a TITAB registered assessor is recommended. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Application of the Unit

Application of the unit	Technical staff who install underground infrastructure for new and upgrades of telecommunications cabling apply the skills and knowledge in this unit. This unit applies to indoor and outdoor installation within customer premises. It may be applied to domestic, commercial or industrial installations.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

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. Prepare for installation of underground enclosure and conduit	1.1. Prepare for given work according to ***relevant legislation***, ***codes***, ***regulations and standards*** 1.2. Arrange access to the site according to required procedure 1.3. Inform appropriate personnel of existing and potential ***hazards*** on worksite 1.4. Verify location of proposed installation according to the appropriate ***plans*** obtained from ***authorised personnel*** 1.5. Obtain information on location of other services from ***relevant authorities*** 1.6. Organise ***tools and equipment*** for given work and safe work practice 1.7. Erect ***barriers*** according to safety requirements
2. Install enclosure and conduit	2.1. Excavate site maintaining ***stability*** and allowing ***ease of access*** 2.2. Construct or install ***enclosure*** according to design specifications and following occupational health and safety (***OHS***) ***and environmental requirements*** 2.3. Install conduit to specifications and manufacturer's requirements ensuring that internal surfaces are free from ***impediments to cable hauling*** 2.4. Seal conduit entry into enclosure against ingress of foreign matter 2.5. Install cable support structure and access facilities in enclosures to specifications
3. Restore site and complete documentation	3.1. Complete backfill safely using suitable spoil and materials that ensures conduit protection 3.2. Reinstate site to identified requirements 3.3. Complete ***reports*** on installation and design amendments accurately and file promptly according to enterprise requirements 3.4. Notify customer and obtain sign off

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communication skills to:
  - liaise with internal and external personnel on technical and operational matters
  - relate to work associates, supervisors, team members and clients
- literacy skills to interpret technical documentation, such as equipment manuals, specifications and service orders
- numeracy skills to take and analyse measurements
- planning and organisational skills to organise and maintain equipment
- problem solving skills to solve equipment and logistics problems
- safety awareness skills to:
  - apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
  - select and use required personal protective equipment conforming to industry and OHS standards
  - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- task management skills to work systematically with required attention to detail and adherence to all safety requirements
- technical skills to:
  - perform fault clearance
  - use diagnostic equipment
  - use excavation machinery
  - use hand and power tools

Required knowledge

- ACMA Competency Requirements for Telecommunications Cabling Provider Rules 2000
- features and operating requirements of test equipment
- information required to operate equipment according to a test specification
- legislation, codes of practice and other formal agreements that impact on the work activity
- manufacturer's requirements for safe operation of equipment
- specific OHS requirements relating to the activity and site conditions
- test methods and performance requirements
- typical issues and challenges that occur on site

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	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the ability to: • excavate for installation of an enclosure and conduit to industry standards applying related OHS requirements and work practices • install enclosure and conduit according to specifications and industry standards • restore site and complete documentation.
Context of, and specific resources for assessment	Assessment must ensure: • sites where installation of underground enclosures and conduit may be conducted • use of installation equipment currently used in industry • relevant regulatory and equipment documentation that impact on cable installation activities.
Methods of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • review of a hands-on project completed by the candidate • review of an oral and written report with completed documentation outlining design amendments • direct observation of the candidate installing underground enclosures and conduit.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTCBL3019A Install underground cable. Aboriginal people and other people from a non-English speaking background may have second language issues. Access must be provided to appropriate learning and

EVIDENCE GUIDE	
	assessment support when required. Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed. In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. Where applicable, physical resources should include equipment modified for people with special needs.

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.	

Relevant legislation, ***codes***, ***regulations and standards*** may include:	• appropriate licences:
	  • crane
	  • forklift
	  • winch
	• Australian Communications Industry Forum (ACIF) Standards and Codes
	• AS Communications Cabling Manual (CCM) Volume 1
	• AS/NZS 3000:2007
	• AS/NZS 3080:2003
	• AS/NZS 3084:2003
	• AS/NZS 3085.1:2004

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	• AS/NZS IEC 61935.1:2006 • AS/NZS IEC 61935.2:2006 • AS/NZS ISO/IEC 14763.3:2007 • AS/NZS ISO/IEC 15018:2005 • AS/NZS ISO/IEC 24702:2007 • cabling security codes and regulations • Environmental Protection Acts • OHS Acts • road and traffic control legislation and codes • technical standards AS/ACIF S008:2006and, AS/ACIF S009:2006.
Hazards may include:	• building debris • earth potential rise (EPR): • event at a site, such as an electrical distribution substation, may expose telecommunications personnel, users or plant to hazardous voltages • glass fibre • live power lines • manual handling • mud and water • natural gas and other gas build up • needle stick injury • optical fibre cable may contain hazardous light • radio frequency (RF) equipment emitting radiation • remote power feeding services which operate at above telecommunications network voltage (TNV) • vermin.
Plans may include:	• building • constructions • design • site layout drawings • street.
Authorised personnel may include:	• construction manager • project manager • site manager • site supervisor.
Relevant authorities may include:	• cable location services (Dial Before you Dig)

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	• environment protection
	• local government
	• private owners
	• utility providers, such as:
	  • electricity
	  • fire services
	  • gas
	  • other telecommunications providers
	  • water.

Tools and equipment may include:	• hand tools, such as:
	  • crowbar
	  • glue
	  • hammers
	  • pick
	  • saws
	  • shovels
	• mechanical equipment, such as:
	  • auger
	  • backhoe
	  • borer
	  • concrete gutter
	  • ditch witch
	  • excavators
	  • mole plough
	  • trenching machine.

Barriers may include:	• flashing lights • trench guards • warning signs and tapes • witches hats.
Stability may refer to:	• structural support • vertical and secure walls • water diversion and extraction.
Ease of access may include:	• access points • egress • location of backfill.

Enclosure may include:	• constructed on site from:
	  • bricks
	  • concrete

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	• polyethylene • pits • purpose built or prefabricated to ACMA requirements • tunnels.

OHS and environmental requirements may relate to:	• identifying other services, including power and gas
	• need for decommissioning and isolating worksite and lines prior to commencement
	• personal protective clothing:
	  • earmuffs
	  • gloves:
	  • plastic
	  • rubber
	  • leather
	  • head protection
	  • kneepads
	  • masks
	  • protective suits
	  • safety boots
	  • safety glasses
	• safe working practices, such as the safe use and handling of:
	  • asbestos
	  • chemicals
	  • materials
	  • tools and equipment
	  • work platforms
	• safety equipment:
	  • flashing lights
	  • gas and other hazard detection equipment
	  • safety barriers
	  • trench guards
	  • warning signs and tapes
	  • witches hats
	• special access requirements
	• suitable light and ventilation
	• environmental considerations:
	  • clean-up protection

RANGE STATEMENT	
	• stormwater protection • waste management.

Impediments to cable hauling may include:	• construction debris
	• poor internal joints
	• spoil, such as:
	  • gravel
	  • rocks
	  • sand
	  • soil.

Reports may include:	• Dial before you dig specifications • job cards • plans • work sheets.

Unit Sector(s)

Unit sector	Telecommunications

Co-requisite units

Co-requisite units		

Competency field

Competency field	Cabling