



Australian Government

Department of Education, Employment and Workplace Relations

ICTCBL2133A Construct underground telecommunications infrastructure

Release: 1

ICTCBL2133A Construct underground telecommunications infrastructure

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	<p>This unit describes the performance outcomes, skills and knowledge required to construct underground telecommunications infrastructure made up of conduits and enclosures for cabling provisioning.</p> <p>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.</p>
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Application of the Unit

Application of the unit	<p>Technical staff whose work involves civil construction of underground telecommunications infrastructure apply the skills and knowledge in this unit.</p> <p>A relevant job role is civil construction worker whose work includes installation of pits and pre-built enclosures with connecting pipes.</p>
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to construct underground work	1.1. Obtain construction design plan from appropriate personnel to scope the work and arrange for site access 1.2. Notify appropriate personnel of identified safety hazards and other services 1.3. Obtain plant, tools and safety equipment to perform tasks safely and efficiently 1.4. Determine the type of underground enclosure specified in the construction design plan that is required for the project
2. Install enclosure	2.1. Use tools according to enterprise guidelines and occupational health and safety (OHS) regulations 2.2. Place a foundation of suitable material to provide a safe and stable footing prior to installing an underground enclosure in an excavation 2.3. Place a recognised barrier over the construction where an enclosure is to be installed over power cables according to enterprise requirements or agreements with other authorities 2.4. Install an enclosure specified in the construction design plan to manufacturer's specifications using the specified materials 2.5. Install an earth mat facility under the enclosure where specified and required by the enterprise
3. Install connecting pipe works	3.1. Install conduit in trench to enterprise specifications 3.2. Connect conduit to an enclosure according to manufacturer's specification and industry practice
4. Complete project	4.1. Complete reports according to enterprise policy and record alterations to plans using appropriate symbols 4.2. Recover obsolete materials and equipment and return to appropriate point for disposal 4.3. Restore site according to the requirements of enterprise or approving authority and to customer satisfaction 4.4. Notify appropriate personnel of job completion and obtain sign off

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
- literacy skills to interpret plans and specifications
- numeracy skills to take measurements for construction work
- planning and organisational skills to organise and maintain equipment
- problem solving skills to solve 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
- technical skills to:
 - apply regulations and standards related to the installation of the enclosures
 - install earth mat facility and conduits
 - interpret drawings
 - lay foundations
 - use hand and power tools in civil construction work

Required knowledge

- civil construction:
 - construction plant, tools and equipment operation
 - enclosure construction methods
 - foundations
 - plans
- 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
- typical issues and challenges that occur on site

Evidence Guide

EVIDENCE GUIDE	
<p>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.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> install enclosures including pipe, pit and prefabricated manhole construct in two different soil types: sand, rock, soil or combination soil types, and shore an excavation site to meet enterprise and regulatory requirements use specialised hand or power tools and equipment normally used for excavation, pipe, conduit installation and site restoration safely apply related OHS requirements and work practices associated with excavation, enclosure installation and site restoration.
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> sites where enclosure construction and may be conducted use of construction equipment currently used in industry relevant regulatory and equipment documentation that impact on construction.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> review of an enclosure constructed by the candidate review completed documentation including reports and records of alterations direct observation of the candidate constructing an underground telecommunications infrastructure oral or written questioning to assess required knowledge.
Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> ICTCBL2131A Install an above ground equipment

EVIDENCE GUIDE	
	<p>enclosure.</p> <p>Aboriginal people and other people from a non-English speaking background may have second language issues.</p> <p>Access must be provided to appropriate learning and assessment support when required.</p> <p>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.</p> <p>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.</p> <p>Where applicable, physical resources should include equipment modified for people with special needs.</p>

Range Statement

RANGE STATEMENT	
<p>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.</p>	
<p><i>Appropriate personnel</i> may include:</p>	<ul style="list-style-type: none"> • customer representative • project manager • site manager.
<p><i>Safety hazards</i> may refer to:</p>	<ul style="list-style-type: none"> • contact with remote power feed • electrical supply and areas of earth potential

RANGE STATEMENT	
	<p>rise that require mandatory separation from cable work</p> <ul style="list-style-type: none"> • hazardous conduit as in conduit colours according to AS 1345:1995 associated with a hazardous service • unstable ground.
<i>Other services</i> may include:	<ul style="list-style-type: none"> • fire services • gas and water mains • high voltage (HV) power.
<i>Plant, tools and safety equipment</i> may include:	<ul style="list-style-type: none"> • equipment: <ul style="list-style-type: none"> • flashing lights • gas and other hazard detection equipment • safety barriers • trench guards • warning signs and tapes • plant: <ul style="list-style-type: none"> • back hoe • bobcat • excavator • trencher • safety equipment: <ul style="list-style-type: none"> • personal protective clothing: <ul style="list-style-type: none"> • earmuffs • gloves • head protection • kneepads • masks • protective suits • safety boots • safety glasses • tools: <ul style="list-style-type: none"> • concrete tool • diggers • jack-hammers • power tools: <ul style="list-style-type: none"> • cutters • drills • saws

RANGE STATEMENT	
	<ul style="list-style-type: none"> • shovels.
<i>Underground enclosure</i> may include:	<ul style="list-style-type: none"> • conduit and pipe • enclosure constructed of: <ul style="list-style-type: none"> • bricks • concrete • concrete panels • fibreglass • metal • plastic • pit • pre-fabricated manhole.
<i>OHS regulations</i> may include:	<ul style="list-style-type: none"> • 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 • 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 • road and traffic control legislation and codes • technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.
<i>Foundation of suitable material</i> may include:	<ul style="list-style-type: none"> • aggregate fill • concrete • gravel • sand.
<i>Recognised barrier</i> may be:	<ul style="list-style-type: none"> • insulating membrane • polymeric strip material.

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units	

Competency field

Competency field	Cabling
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