



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **ICTCBL2064A Haul underground cable**

**Release: 1**

## ICTCBL2064A Haul underground cable

### Modification History

Not Applicable

### Unit Descriptor

|                               |  |
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| <p><b>Unit descriptor</b></p> | <p>This unit describes the performance outcomes, skills and knowledge required to haul underground cable. It involves installation and recovery of cables, including multi-pair, coaxial and optical fibre.</p> <p>All customer cabling work in the telecommunications, fire, security and data industries must be performed by a registered cabler. All cablers are required to register with an Australian Communications and Media Authority (ACMA)-accredited registrar.</p> |
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### Application of the Unit

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| <p><b>Application of the unit</b></p> | <p>Technical staff who haul underground cable for telecommunications cabling projects apply the skills and knowledge in this unit.</p> <p>They may provide cabling in access networks or customer premises. They may also carry out cable maintenance, new installations or upgrades.</p> <p>This unit may be applied to domestic, commercial or industrial installations.</p> |
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### Licensing/Regulatory Information

Not Applicable

## Pre-Requisites

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| <b>Prerequisite units</b> |  |  |
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## Employability Skills Information

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| <b>Employability skills</b> | This unit contains employability skills. |
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## Elements and Performance Criteria Pre-Content

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| 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 for safe underground cable hauling | 1.1. Prepare for given work according to <b>relevant legislation, codes, regulations and standards</b><br>1.2. Arrange access to the site according to required procedure<br>1.3. Inform appropriate personnel of identified <b>hazards</b> on worksite<br>1.4. Confirm hauling location of proposed <b>cable</b> according to the appropriate <b>plan specifications</b> obtained from <b>authorised personnel</b><br>1.5. Obtain information on proposed locations of other services from <b>relevant authorities</b><br>1.6. Set up <b>tools and equipment</b> required for safe work practice according to enterprise guidelines<br>1.7. Verify air pressure in drum cables before hauling to ensure integrity of the cable<br>1.8. Check for <b>dangerous gases</b> and place <b>guards</b> around open manholes following occupational health and safety ( <b>OHS</b> ) <b>and environmental requirements</b> |
| 2. Haul cable                                 | 2.1. Handle existing cables in a manner that avoids <b>cable damage</b><br>2.2. Use <b>roping techniques</b> to prove that conduit is clear for hauling<br>2.3. Attach cable to rope and haul cable into and out of pits and manholes ensuring no sheath damage<br>2.4. Lubricate cable and haul at correct tension maintaining smooth passage between dispenser and hauler<br>2.5. Maintain cable and services separations in parallel runs and crossovers to meet manufacturer's and regulation requirements<br>2.6. Maintain sufficient cable length allowance for jointing and ensure cable is laid up and bent within bending radius tolerance for cable materials in underground enclosure<br>2.7. Seal and pressurise cables according to enterprise requirements to ensure no sheath damage<br>2.8. Tag cable for future identification   |
| 3. Complete works on site                     | 3.1. Record any approved alteration to the original design using correct symbols and return to appropriate personnel  |

| ELEMENT | PERFORMANCE CRITERIA   |
|---------|--|
|         | 3.2. Complete and sign reports, where required, according to enterprise policy<br>3.3. Reinststate the site to customer's satisfaction and dispose of wastes in an environmentally safe manner<br>3.4. Notify customer 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 and work in teams
- literacy skills to interpret technical documentation, such as cable plans, equipment manuals and specifications
- 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:
  - diagnostic equipment
  - perform fault clearance
  - 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

**REQUIRED SKILLS AND KNOWLEDGE**

- legislation, codes of practice and other formal agreements that impact on the work activity
- manufacturer's recommendations for correct hauling optical fibre cables
- safety precautions when working with laser based systems
- 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

| <b>EVIDENCE GUIDE</b>   |   |
|---|---|
| <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> |   |
| <b>Overview of assessment</b>   |   |
| <b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>   | <p>Evidence of the ability to:</p> <ul style="list-style-type: none"> <li>haul cable applying related OHS requirements and work practices, including those related to dangerous gases and air pressures in existing and new cable</li> <li>use cable dispensing equipment</li> <li>use specialised hand or power tools and equipment for hauling cable safely</li> <li>read and interpret drawings</li> <li>comply with all related OHS requirements and work practices.</li> </ul> |
| <b>Context of and specific resources for assessment</b>   | <p>Assessment must ensure:</p> <ul style="list-style-type: none"> <li>sites where installation of underground cable may be conducted</li> <li>use of installation equipment currently used in industry</li> <li>relevant regulatory and equipment documentation that impact on cable installation activities.</li> </ul>  |
| <b>Method of assessment</b>   | <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"> <li>review of a hands-on project completed by the candidate</li> <li>review of an oral and written report with completed documentation, including updated cable plans and records</li> <li>direct observation of the candidate hauling underground cable.</li> </ul>                         |
| <b>Guidance information for assessment</b>  | <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"> <li>ICTCBL2133A Construct underground telecommunications infrastructure.</li> </ul>   |

**EVIDENCE GUIDE**

|  |   |
|--|---|
|  | <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> |
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**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:

- Australian Communications Industry Forum (ACIF) standards and codes
- ACMA technical standards
- ARPANSA electromagnetic radiation (EMR) standard
- Australian building codes and regulations
- Australian standards
- enterprise standards



| <b>RANGE STATEMENT</b>                   |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• environmental protection</li> <li>• equipment standards, intrinsically safe lightning protection, site engineering standard</li> <li>• fire regulations</li> <li>• heritage legislation</li> <li>• international standards</li> <li>• local government</li> <li>• OHS</li> <li>• Radcoms Act</li> <li>• Telecoms Act</li> <li>• WI's, CI's, Business Operating Procedures (BOP), Radiocommunications Assignment and Licensing Instruction (RALI), assignment guidelines, spectrum planning reports.</li> </ul> |
| <b>Hazards</b> may include:              | <ul style="list-style-type: none"> <li>• earth potential rise (EPR)</li> <li>• optical cable: <ul style="list-style-type: none"> <li>• bare fibres</li> <li>• hazardous laser light</li> </ul> </li> <li>• remote power feeding</li> <li>• radio frequency (RF) emission.</li> </ul>  |
| <b>Cable</b> may include:                | <ul style="list-style-type: none"> <li>• coaxial (CATV)</li> <li>• grease filled or air cored copper cable</li> <li>• optical fibre.</li> </ul>   |
| <b>Plan specifications</b> may include:  | <ul style="list-style-type: none"> <li>• building plans</li> <li>• cable existing in pipes</li> <li>• cable size</li> <li>• conductor size</li> <li>• conduit size</li> <li>• construction plans</li> <li>• distance to be hauled</li> <li>• site layout drawings</li> <li>• site plans</li> <li>• street plans.</li> </ul>   |
| <b>Authorised personnel</b> may include: | <ul style="list-style-type: none"> <li>• construction manager</li> <li>• project manager</li> <li>• site manager</li> <li>• site supervisor.</li> </ul>   |
| <b>Relevant authorities</b> may include: | <ul style="list-style-type: none"> <li>• cable location services (Dial Before you Dig)</li> <li>• environment protection</li> <li>• local government</li> </ul>   |

| <b>RANGE STATEMENT</b>                                   |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• private owners</li> <li>• utility providers such as:               <ul style="list-style-type: none"> <li>• electricity</li> <li>• fire services</li> <li>• gas</li> <li>• other telecommunications providers</li> <li>• water.</li> </ul> </li> </ul>   |
| <i>Tools and equipment</i> may include:                  | <ul style="list-style-type: none"> <li>• crane</li> <li>• forklift</li> <li>• hand</li> <li>• hauling eye</li> <li>• jinker</li> <li>• mandrill</li> <li>• mechanical</li> <li>• mesh stockings</li> <li>• power</li> <li>• pressure gauge</li> <li>• roly winch</li> <li>• winch truck.</li> </ul>   |
| <i>Dangerous gases</i> may be:                           | <ul style="list-style-type: none"> <li>• asphyxiating gas</li> <li>• carbon dioxide</li> <li>• carbon monoxide</li> <li>• combustible</li> <li>• natural gas</li> <li>• noxious gas.</li> </ul>   |
| <i>Guards</i> may be:                                    | <ul style="list-style-type: none"> <li>• barricades</li> <li>• plates</li> <li>• temporary fencing.</li> </ul>  |
| <i>OHS and environmental requirements</i> may relate to: | <ul style="list-style-type: none"> <li>• identifying other services, including power and gas</li> <li>• need to decommission and isolate worksite and lines prior to commencement</li> <li>• personal protective clothing:               <ul style="list-style-type: none"> <li>• earmuffs</li> <li>• gloves:                   <ul style="list-style-type: none"> <li>• leather</li> <li>• plastic</li> <li>• rubber</li> </ul> </li> <li>• head protection</li> </ul> </li> </ul> |

| <b>RANGE STATEMENT</b>                             |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• kneepads</li> <li>• masks</li> <li>• protective suits</li> <li>• safety boots</li> <li>• safety glasses</li> <li>• safe working practices, such as the safe use and handling of:               <ul style="list-style-type: none"> <li>• asbestos</li> <li>• chemicals</li> <li>• materials</li> <li>• tools and equipment</li> <li>• work platforms</li> </ul> </li> <li>• safety equipment:               <ul style="list-style-type: none"> <li>• flashing lights</li> <li>• gas and other hazard detection equipment</li> <li>• safety barriers</li> <li>• trench guards</li> <li>• warning signs and tapes</li> <li>• witches hats</li> </ul> </li> <li>• suitable light and ventilation</li> <li>• special access requirements</li> <li>• environmental considerations:               <ul style="list-style-type: none"> <li>• clean-up protection</li> <li>• stormwater protection</li> <li>• waste management.</li> </ul> </li> </ul> |
| <b><i>Cable damage</i></b> may be reduced using:   | <ul style="list-style-type: none"> <li>• cable dispensing methods:               <ul style="list-style-type: none"> <li>• 2 pair cable multi-dispenser</li> <li>• jinker or cable trailer</li> <li>• spinner</li> </ul> </li> <li>• end sealing methods:               <ul style="list-style-type: none"> <li>• lead wipe</li> <li>• thermo-shrink end caps.</li> </ul> </li> </ul>   |
| <b><i>Roping techniques</i></b> may include using: | <ul style="list-style-type: none"> <li>• blower-sucker</li> <li>• compressed air fibreglass rods</li> <li>• PVC rods</li> <li>• Thomas duct rodder.</li> </ul>  |

**Unit Sector(s)**

|                    |                    |
|--------------------|--------------------|
| <b>Unit sector</b> | Telecommunications |
|--------------------|--------------------|

**Co-requisite units**

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|---------------------------|--|
| <b>Co-requisite units</b> |  |
|                           |  |
|                           |  |

**Competency field**

|                         |         |
|-------------------------|---------|
| <b>Competency field</b> | Cabling |
|-------------------------|---------|