



**Australian Government**

# **ICTCBL2006B Place and secure customer cable**

**Release 1**

## ICTCBL2006B Place and secure customer cable

### Modification History

| Release   | Comments                                                                                                                                                                                      |
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| Release 2 | <p>This version first released with <i>ICT10 Integrated Telecommunications Training Package Version 3.0</i>.</p> <p>References to other units updated.</p> <p>Outcomes deemed equivalent.</p> |
| Release 1 | <p>This version first released with <i>ICT10 Integrated Telecommunications Training Package Version 1.0</i>.</p>                                                                              |

### Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to install customer cable infrastructure. It involves selecting cable route, setting up cable dispensers and placing and securing cable.

The activity may be for a new cable installation, upgrade of cable capacity for an existing network or subsystem, or cabling infrastructure for convergence to Next Generation Networks (NGN).

Assessment by a TITAB registered assessor is recommended.

The six unit competency set ICTCBL2005B, ICTCBL2006B, ICTCBL2008B, ICTCBL2012B, ICTCBL2017B and ICTCMP2022B, that meets the Australian Communications and Media Authority's (ACMA) requirements for Cabling Provider Registration (CPR), is generally used as part of a more specialised customer cabling qualification. This set is usually regarded as more suitable for new entrants where limited industry experience has been obtained and forms the major part of specialised qualifications, such as ICT20313 Certificate II in Telecommunications Cabling. When these six units are undertaken as a set within state and territory funding approved programs, the two benchmark CPR units (ICTCBL2136B and ICTCBL2137B) are not required.

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 ACMA-accredited registrar.

## Application of the Unit

Technical staff who install and provide cabling infrastructure for customer premises and equipment apply the skills and knowledge in this unit.

They may be required to do new installations, upgrades or maintain existing networks in domestic, commercial and industrial installations. Communications applications include digital and analog, telephony, data, video, digital broadcasting, computer networks, local area networks (LAN), wide area networks (WAN) and multimedia.

This unit applies to indoor and outdoor cable and systems within customer premises.

## Licensing/Regulatory Information

Refer to the Unit Descriptor.

## Pre-Requisites

Not applicable.

## Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

| <b>Element</b>                                                           | <b>Performance Criteria</b>                                                                                                                                                                                                                                                                                             |
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| <i>Elements describe the essential outcomes of a unit of competency.</i> | <i>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.</i> |

## Elements and Performance Criteria

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| 1. Prepare for task and identify cable route | <p>1.1 Arrange access to the site according to required procedure and comply with <b>site security arrangements</b> and <b>relevant legislation, codes, regulations and standards</b></p> <p>1.2 Notify appropriate personnel of identified <b>safety hazards</b> at the cabling work site</p> <p>1.3 Plan cable route identifying and avoiding <b>other services</b> and remote power feeding services operating at above telecommunications network voltage (TNV) on site in commercial buildings</p> <p>1.4 Select cable route to maintain required clearances and segregations according to cable plan and complying with relevant industry standards</p> <p>1.5 Confirm <b>cable route</b> and requirements with customer</p> <p>1.6 Select <b>tools</b>, equipment and <b>cables</b> for installation of support system from <b>work specifications</b> and schedules</p> |
| 2. Set up cable dispensers                   | <p>2.1 Determine feeder locations to minimise wastage of cable and efficiency</p> <p>2.2 Set up <b>feeders</b> in locations to provide ease of access during hauling of cable</p> <p>2.3 Secure feeder locations to minimise safety risks during installation</p> <p>2.4 Label hauling end of the cable with unique identifier prior to placement</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3. Place and secure cable                    | <p>3.1 <b>Haul and place cable</b> in a <b>safe manner</b> within clearances required by industry standards, manufacturer's and work specifications</p> <p>3.2 Place cable in a neat, orderly and methodical manner, allowing sufficient excess at cable ends to facilitate termination</p> <p>3.3 Inspect cable to maintain separations to comply with regulations</p> <p>3.4 Install barriers to achieve <b>separations</b> where sufficient spatial separation cannot be met with other services</p> <p>3.5 Install and trim <b>securing anchors</b> promptly to restrain cable movement to manufacturer's specifications</p>                                                                                                                                                                                                                                                |
| 4. Complete cable installation               | <p>4.1 Update <b>records and cable plans</b> promptly and accurately</p> <p>4.2 Store records and plans according to customer and company requirements</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|  | 4.3 Remove installation waste and debris from worksite and dispose of according to environmental requirements to maintain safe worksite conditions |
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## 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 technical documentation, equipment manuals and specifications
- numeracy skills to take and analyse measurements
- planning and organisational skills to:
  - arrange site access
  - interpret and apply relevant regulations and standards
  - 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 occupational health and safety (OHS) standards
  - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- technical skills to:
  - read and interpret drawings related to:
    - cable coding system
    - cable layouts
    - frame locations
    - identifiers
    - outlet locations
  - use correct methods of running and fastening cables in commercial buildings
  - use hand and power tools.
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### Required knowledge

- building construction of commercial buildings
- cable and services segregation clearances to ensure cable route complies with manufacturer's, enterprise, legislative and industry codes of practice
- features and operating requirements of equipment
- information required to operate appropriate equipment according to specifications
- installation methods and performance requirements
- 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

*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.*

|                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <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>place and secure cables on support structures and building faces for both internal and external locations avoiding cable damage</li> <li>plan cable placement and set up cable dispensers for structured, aerial and underground cabling</li> <li>haul and install cables on support structures and building faces for both internal and external locations applying relevant regulations and standards</li> <li>install securing methods for above locations</li> <li>complete records and TCA forms</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 placing and securing customer cable may be conducted</li> <li>use of equipment currently used in industry</li> <li>relevant regulatory and equipment documentation that impact on cable installation activities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                    |
| <b>Methods 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</li> <li>direct observation of the candidate placing and securing cable for three different situations.</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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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|  | <ul style="list-style-type: none"><li>• ICTCBL2005B Install customer cable support systems.</li></ul> <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

*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.*

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <b>Site security arrangements</b> may include:                             | <ul style="list-style-type: none"> <li>• access times and methods</li> <li>• approval to enter site</li> <li>• approved entry requirements</li> <li>• electronic surveillance</li> <li>• security clearance.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Relevant legislation, codes, regulations and standards</b> may include: | <ul style="list-style-type: none"> <li>• Australian Communications Industry Forum (ACIF) standards and codes</li> <li>• ACMA technical standards</li> <li>• AS Communications Cabling Manual (CCM) Volume 1</li> <li>• AS/NZS 3000:2007</li> <li>• AS/NZS 3080:2003</li> <li>• AS/NZS 3084:2003</li> <li>• AS/NZS 3085.1:2004</li> <li>• AS/NZS IEC 61935.1:2006</li> <li>• AS/NZS IEC 61935.2:2006</li> <li>• AS/NZS ISO/IEC 14763.3:2007</li> <li>• AS/NZS ISO/IEC 15018:2005</li> <li>• AS/NZS ISO/IEC 24702:2007</li> <li>• Australia Building Codes and Regulations</li> <li>• cabling security codes and regulations</li> <li>• confined spaces regulations</li> <li>• Environmental Protection Acts</li> <li>• fire regulations</li> <li>• mining legislation</li> <li>• noise abatement and heritage legislation</li> <li>• OHS</li> <li>• regulated or industry codes of practice</li> <li>• technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.</li> </ul> |
| <b>Safety hazards</b> may refer to:                                        | <ul style="list-style-type: none"> <li>• access points that may contain               <ul style="list-style-type: none"> <li>• hazardous light (non-visible laser)</li> <li>• radio frequency (RF) emission</li> </ul> </li> <li>• contact with remote power feed</li> <li>• electrical supply and areas of earth potential rise that require</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|                                         | <ul style="list-style-type: none"> <li>mandatory separation from communications cable</li> <li>hazardous conduit as according to AS 1345:1995 conduit colours associated with a hazardous service.</li> </ul>                                                                                                                                                                                                                                                                                                                                                |
| <b>Other services</b> may include:      | <ul style="list-style-type: none"> <li>availability and suitability of existing cabling trays and fixing systems</li> <li>fire sprinkler systems</li> <li>gas and water mains</li> <li>high voltage (HV) power.</li> </ul>                                                                                                                                                                                                                                                                                                                                   |
| <b>Cable route</b> may include:         | <ul style="list-style-type: none"> <li>ducting systems</li> <li>false or suspended ceilings</li> <li>raised floor</li> <li>sub-floor ducting</li> <li>wall cavities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Tools</b> may include:               | <ul style="list-style-type: none"> <li>cutters</li> <li>drills</li> <li>explosive power tools</li> <li>hammers</li> <li>hand or power (electrical or air) tools</li> <li>hauling rope</li> <li>power leads</li> <li>pulling sock.</li> </ul>                                                                                                                                                                                                                                                                                                                 |
| <b>Cables</b> may include:              | <ul style="list-style-type: none"> <li>cable compliant with appropriate ACMA technical standard requirements</li> <li>structured: <ul style="list-style-type: none"> <li>Category 5, 6, 6A, 7 or 7A</li> <li>shielded twisted pairs (STP) or unshielded twisted pairs (UTP)</li> <li>underground or aerial.</li> </ul> </li> </ul>                                                                                                                                                                                                                           |
| <b>Work specifications</b> may include: | <ul style="list-style-type: none"> <li>ACMA standards</li> <li>cable plans and designs</li> <li>consideration of access to sites: <ul style="list-style-type: none"> <li>door and lift access</li> <li>floor loadings</li> <li>loading limits</li> <li>storage areas</li> </ul> </li> <li>contract documents</li> <li>enterprise or local environmental hazard requirements</li> <li>manufacturer's specifications</li> <li>site requirements: <ul style="list-style-type: none"> <li>access and egress points</li> <li>noise control</li> </ul> </li> </ul> |

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|                                           | <ul style="list-style-type: none"> <li>• presentation</li> <li>• relationships with other customer activities</li> <li>• specification schedules</li> <li>• use of over voltage protection.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Feeders</b> may include:               | <ul style="list-style-type: none"> <li>• draw unit</li> <li>• feeding guides</li> <li>• manufacturer's coils</li> <li>• pulley system.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Haul and place cable</b> may refer to: | <ul style="list-style-type: none"> <li>• cable placed: <ul style="list-style-type: none"> <li>• in ceilings</li> <li>• on external face of buildings</li> <li>• on external poles</li> <li>• on support structures</li> <li>• through modular furniture ducts</li> <li>• under floors</li> <li>• vertically</li> <li>• within cavities</li> </ul> </li> <li>• minimising cable damage: <ul style="list-style-type: none"> <li>• burning</li> <li>• crushing</li> <li>• cutting</li> <li>• kinking</li> <li>• nicking</li> <li>• sheath twist</li> <li>• stretching.</li> </ul> </li> </ul> |
| <b>Safe manner</b> may include:           | <ul style="list-style-type: none"> <li>• safe use and handling of: <ul style="list-style-type: none"> <li>• chemicals</li> <li>• materials</li> <li>• tools and equipment</li> <li>• work platforms: <ul style="list-style-type: none"> <li>• ladders</li> <li>• scaffold</li> <li>• scissor lifts or cherry pickers</li> </ul> </li> </ul> </li> <li>• testing of external poles prior to access</li> <li>• use of protective clothing: <ul style="list-style-type: none"> <li>• earmuffs</li> <li>• gloves</li> <li>• head protection</li> <li>• kneepads</li> </ul> </li> </ul>         |

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|                                               | <ul style="list-style-type: none"> <li>• masks</li> <li>• protective suits</li> <li>• safety boots</li> <li>• safety glasses</li> <li>• working in close proximity to exposed electrical conductors.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Separations</b> may include:               | <ul style="list-style-type: none"> <li>• wiring rules standard AS/ACIF S009:2006</li> <li>• distance between communications cable and other cable required by regulations where no barrier is installed</li> <li>• distances between communications cable and other services: <ul style="list-style-type: none"> <li>• high voltage (HV) <ul style="list-style-type: none"> <li>• single core</li> <li>• HV multi-core</li> </ul> </li> <li>• low voltage (LV)</li> <li>• open terminations</li> </ul> </li> <li>• physical barriers installed when there is not enough space to achieve spatial separations</li> <li>• requirements defined in ACMA regulations and other relevant Australian standards.</li> </ul> |
| <b>Securing anchors</b> may include:          | <ul style="list-style-type: none"> <li>• brackets</li> <li>• clips</li> <li>• fasteners</li> <li>• ties.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Records and cable plans</b> may relate to: | <ul style="list-style-type: none"> <li>• electronic databases and computer assisted designs (CAD)</li> <li>• information on: <ul style="list-style-type: none"> <li>• cable coding system and identifiers</li> <li>• cable layout</li> <li>• frame location</li> <li>• outlet location</li> </ul> </li> <li>• inventory of material used on project</li> <li>• record of installation procedures</li> <li>• telecommunications cabling advice (TCA) forms: <ul style="list-style-type: none"> <li>• TCA1</li> <li>• TCA2</li> </ul> </li> <li>• updating cable plan and route.</li> </ul>                                                                                                                            |

## Unit Sector(s)

Telecommunications - Cabling