



Australian Government

ICTCBL2163A Install a cable lead-in

Release 1

ICTCBL2163A Install a cable lead-in

Modification History

Release	Comments
Release 1	This version first released with <i>ICT10 Integrated Telecommunications Training Package Version 3.0</i> .

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to install indoor and outdoor aerial and underground cable lead-ins. It involves digital reception installation, broadband and customer installations.

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

Application of the Unit

Technical staff who haul underground or fix aerial cable lead-in apply the skills and knowledge in this unit. They may make use of tension meters and hauling equipment.

The unit can be applied to new installations and upgrades of telecommunications cabling projects in domestic, commercial and industrial installations.

Licensing/Regulatory Information

Users should confirm licensing requirements with the relevant federal, state or territory authority.

Pre-Requisites

Nil

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements	Performance Criteria
<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

1. Prepare for cable installation	<p>1.1 Prepare for given work according to <i>industry standards</i></p> <p>1.2 Arrange access to the site according to required procedure</p> <p>1.3 Inform <i>appropriate personnel</i> of identified <i>hazards and constraints</i> on work site</p> <p>1.4 Obtain <i>cable</i> installation plan and set up installation equipment according to manufacturer requirements</p> <p>1.5 Select suitable <i>protective clothing, tools and equipment, and safety equipment, and confirm support structures are safe</i></p>
2. Install aerial cable lead-in	<p>2.1 Identify and use safe support structures</p> <p>2.2 Select type of cable bearer and determine need for separate catenary wire installation</p> <p>2.3 Secure catenary wire or bearer wire permanently to support structure using <i>aerial fixing devices</i>, and adjust tension to meet relevant height and minimum sag requirements to required specifications</p> <p>2.4 Secure cable safely to catenary wire, leaving cable loop on support structure</p> <p>2.5 Terminate cable in customer enclosure and aerial enclosure</p>
3. Install underground cable lead-in	<p>3.1 Run push rod through pipe and attach cable for hauling</p> <p>3.2 Haul cable using lubricant, cable slippers or rollers to ensure no sheath damage when hauling at correct tension into and out of enclosures</p> <p>3.3 Provide sufficient cable allowance in enclosures for jointing and maintenance requirements</p> <p>3.4 Terminate cable in customer enclosure and pit enclosure</p>
4. Seal and secure cable	<p>4.1 Seal cable ends to prevent ingress of foreign material</p> <p>4.2 Secure cable loop on support structure to minimise damage to conductors</p> <p>4.3 Weather seal building entry points where appropriate</p> <p>4.4 Fit over voltage protection devices to all cables with metallic component where required</p>
5. Complete tasks on site	<p>5.1 Record any approved alteration to the original design and return to appropriate personnel</p> <p>5.2 Complete <i>appropriate records</i> and sign reports where required according to enterprise policy</p>

	<p>5.3 Restore the site to original condition and dispose of waste in an environmentally safe manner</p> <p>5.4 Notify customer and obtain sign-off</p>
--	---

Required Skills and Knowledge

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

Required skills

- communication skills to liaise with work associates, supervisors, team members and clients
- literacy skills to interpret:
 - technical documentation, such as equipment manuals, specifications and requirements for aerial and underground installation
 - requirements of relevant legislation, codes, regulations and standards
- numeracy skills to take and analyse measurements
- planning and organising 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 work health and safety (WHS) 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 and identifiers
 - cable layouts
 - frame locations
 - outlet location
 - use hand and power tools.
 -

Required knowledge

- features and operating requirements of testing equipment
- manufacturer requirements for safe operation of equipment
- specific WHS requirements relating to the activity and site conditions
- termination methods and performance requirements
- typical issues and challenges that occur on site
- workplace procedures reflecting the requirements of legislation, codes of practice and other formal agreements that impact on the work activity

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.

<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • install at least one type of aerial cable and one type of underground cable, including placing and securing cables on support structures and building faces for both internal and external locations to industry standards; applying related WHS requirements and work practices • haul, secure and seal cable • identify safe support structures from pole status markings and visual inspection • terminate cables at the customer and network ends of aerial and underground installations • document installation and test results and provide report to client • comply with all related WHS requirements and work practices.
<p>Context of, and specific resources for assessment</p>	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> • sites where aerial and underground cable lead-ins may be conducted • use of equipment and personal protective equipment currently used in industry • use of testing equipment currently used in industry • relevant regulatory and equipment documentation that impacts on work activities.
<p>Methods of assessment</p>	<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 a hands-on project completed by the candidate • review of an oral and written report with completed documentation • direct observation of the candidate terminating cables.
<p>Guidance information for assessment</p>	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, e.g.</p>

	<ul style="list-style-type: none">• ICTCBL2008B Terminate metallic conductor customer cable. <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

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><i>Industry standards</i> may include:</p>	<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 • ISO Draft 11801 (International) • regulated or industry codes of practice, including appropriate Australian Communications and Media Authority (ACMA) technical standards • technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.
<p><i>Appropriate personnel</i> may include:</p>	<ul style="list-style-type: none"> • construction manager • project manager • site manager • site supervisor.
<p><i>Hazards and constraints</i> may include:</p>	<ul style="list-style-type: none"> • electrical supply and areas of earth potential rise (EPR) that require mandatory separation from communications cable and limitations on work • optical cable at all access points that may contain a hazardous light • risks associated with remote power feeding services.
<p><i>Cable</i> may include:</p>	<ul style="list-style-type: none"> • coaxial • metallic cable • optical fibre.
<p><i>Protective clothing</i> may include:</p>	<ul style="list-style-type: none"> • earmuffs • gloves:

	<ul style="list-style-type: none"> • leather • plastic • rubber • head protection • kneepads • masks • protective suits • safety boots • safety glasses.
<i>Tools and equipment</i> may be:	<ul style="list-style-type: none"> • mechanical or hand tools, such as: <ul style="list-style-type: none"> • augers • cable tensioner • cherry pickers • drills • fixing brackets • hammers • height measuring devices • ladders • scissor lifts • spanners.
<i>Safety equipment</i> may include:	<ul style="list-style-type: none"> • aerial safety belts and lines • personal protective equipment • site hazard identification and control equipment: <ul style="list-style-type: none"> • flashing lights • guards • traffic signs • warning signs and tapes • witches hats.
<i>Confirm support structures are safe</i> refers to:	<ul style="list-style-type: none"> • checking for condemned pole status markings • checking for visible signs of decay or stress • using industry-accepted testing methods.
<i>Aerial fixing devices</i> may include:	<ul style="list-style-type: none"> • clamps • hooks • pig rings • riser pipes • screw hooks.
<i>Appropriate records</i> may include:	<ul style="list-style-type: none"> • building distributor (BD), campus distributor (CD), floor distributor (FD) record books and local distributor (LD) record cards • building, cabling and equipment location plans

	<ul style="list-style-type: none">• computerised plans• databases• labelling of:<ul style="list-style-type: none">• distributor pairs• distributor verticals• equipment closets• patch panels• rooms• telecommunication outlets• telecommunications administration centre (TAC) or NTD cards conforming to AS/ACIF S009:2006• telecommunications cabling advice (TCA) forms:<ul style="list-style-type: none">• cable drawings• cable plans• record books• record cards• TCA1 (sign-off form)• TCA2.
--	--

Unit Sector(s)

Telecommunications - Cabling