



Australian Government

ICTCBL251 Install aerial and underground cable lead-ins

Release: 1

ICTCBL251 Install aerial and underground cable lead-ins

Modification History

Release	Comments
Release 1	This version released with ICT Information and Communications Technology Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to install indoor and outdoor aerial and underground lead-ins for a new metallic or optical cable installation, or upgrade of an existing network or subsystem, or cabling infrastructure for convergence to next generation networks (NGN), digital reception and broadband.

Cable installation may be for a new cable, a cable upgrade or a cable in need of repair. It can be applied to new installations and upgrades of telecommunications cabling projects in domestic, commercial and industrial customer installations.

It applies to technical staff who haul underground or fixed aerial cable lead-in to deliver services in x-digital subscriber line (xDSL), fibre to the home (FTTH) and hybrid fibre coaxial (HFC) networks. This work may require the use of tension meters and hauling equipment.

Licensing, legislative, regulatory and certification requirements apply to telecommunications systems. 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. Refer to the ICT Information and Communications Technology Training Package Companion Volume Implementation Guide or the relevant regulator for details of licensing, legislative or certification requirements.

Unit Sector

Telecommunications – Cabling

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for cable	1.1 Obtain construction plan from appropriate personnel to scope

ELEMENT	PERFORMANCE CRITERIA
installation	work and arrange for site access 1.2 Access site according to enterprise procedure 1.3 Inform appropriate personnel of identified hazards and safety constraints on worksite 1.4 Obtain cable installation plan and set up installation equipment according to manufacturer requirements 1.5 Identify existing ‘other’ services by analysing drawings and following Dial Before You Dig (DBYD) protocols 1.6 Determine cable route and type of cable from construction plan, identifying and avoiding other services 1.7 Select suitable protective clothing, tools and equipment, and safety equipment, and confirm support structures are safe
2 Install aerial cable lead-in	2.1 Use safe support structures and appropriate tools 2.2 Select required type of cable bearer and determine need for separate catenary wire or self-supporting installation 2.3 Install and secure catenary wire, integral bearer cable (IBC) or self-supporting cable permanently to support structure using aerial fixing devices, and adjust tension to meet relevant height and minimum sag requirements to required specifications 2.4 Secure cable safely, leaving cable loop on support structure 2.5 Install mid-span fly offs according to cable configuration, using approved hardware 2.6 Install cable ensuring no damage is caused 2.7 Maintain physical characteristics of cable leaving cable loop on support structure according to cable configuration 2.8 Terminate and test cable continuity in customer enclosure and aerial enclosure 2.9 Label cables according to industry guidelines and authorisations
3 Install underground cable lead-in	3.1 Ensure pipe or conduit is not blocked and is clear of debris 3.2 Run push rod through pipe and attach cable for hauling 3.3 Haul cable using lubricant, cable slippers or rollers to ensure no sheath damage when hauling at correct tension into and out of enclosures 3.4 Provide sufficient cable allowance in enclosures for jointing and maintenance requirements 3.5 Terminate cable in customer enclosure and pit enclosure

ELEMENT	PERFORMANCE CRITERIA
4 Seal and secure cable	4.1 Seal cable ends to prevent entrance of foreign material according to manufacturer specifications and industry standards 4.2 Secure cable loop on support structure to minimise damage to conductors 4.3 Weatherproof building entry points as required 4.4 Fit over voltage protection devices to all cables with metallic component as required
5 Complete tasks on site	5.1 Record any approved alteration to original design and return to appropriate personnel 5.2 Complete appropriate records and sign reports as required according to industry policy 5.3 Restore site to original condition and dispose of waste in environmentally safe manner 5.4 Notify appropriate personnel and obtain sign-off

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance, but not explicit in the performance criteria.

Skill	Description
Reading	• Uses a range of strategies to facilitate comprehension
Writing	• Completes records according to enterprise requirements
Oral Communication	• Use language and non-verbal features appropriate to context
Numeracy	• Interprets and comprehends a range of everyday mathematical information that is embedded in familiar and routine texts
Navigate the world of work	• Takes personal responsibility for adherence to legal and regulatory responsibilities relevant to own work context, and draws attention to any issues that may affect self or others
Get the work done	• Implements actions as per plan, making slight adjustments if necessary, and addressing some unexpected issues • Automatically implements standard procedures for routine decisions in response to familiar problems

Unit Mapping Information

No equivalent unit. Supersedes and is not equivalent to ICTCBL220 Install a cable lead-in.

Links

Companion Volume Implementation Guides are available from VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTCBL251 Install aerial and underground cable lead-ins

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Performance Evidence

The candidate must demonstrate the ability to perform the tasks outlined in the elements, performance criteria, and foundation skills, and to:

- plan the works and prepare the site
- install at least two types 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
- install at least one mid-span fly offs utilising industry specific/approved hardware
- haul, secure and terminate, continuity test and seal cables
- perform visual inspection to identify safe support structures from pole status markings
- use specialised hand or power tools and equipment for safely installing aerial and underground cable
- terminate cables at the customer and network ends of aerial and underground installations
- complete and provide a report, documenting the installation for the customer
- comply with all related work health and safety (WHS) requirements, industry standards, authorisations and work practices.

Note: Evidence must be provided at least once when a specific volume or frequency is not stated.

Knowledge Evidence

The candidate must demonstrate the knowledge required to perform the tasks outlined in the elements, performance criteria, and foundation skills, which includes knowledge about:

- legislation, codes, enterprise procedures and other formal agreements that impact on the work activity
- codes, standards, industry guidelines and authorisations for cable installation and cabling
- specific WHS requirements and environmental procedures relating to the activity and site conditions
- relevant regulatory requirements for working at heights and working underground

- common types of cable used in telecommunications
- manufacturer requirements for selection and safe operation of tools and equipment
- safety equipment, both personal and worksite related, required for safe work practices
- required fixing devices and hardware used in cable lead-in work
- termination methods and performance requirements that include cable continuity of installed cables
- typical safety issues and challenges that occur on site, including issues relating to the safe use of support structures
- purpose of records and documentation required for work activity.
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Assessment Conditions

Skills must be assessed in a workplace or simulated environment where conditions are typical of those in a telecommunications work environment or workplace.

Access is required to:

- site/s where aerial and underground cable lead-ins can be conducted
- plant, tools, equipment and personal protective equipment currently used in industry
- special purpose tools, equipment and materials currently used in industry such as continuity testing equipment
- relevant regulatory and equipment documentation that impacts on work activities.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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