Australian Government

Department of Education, Employment and Workplace Relations

ICTCBL2134A Fix aerial cable

Release: 1

ICTCBL2134A Fix aerial cable

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to install aerial cables in customer and access networks. It involves installing, terminating and securing cables. Aerial cable installation may be for a new cable, a cable upgrade or a cable in need of repair. Aerial cables are used in telecommunication applications including voice, video and data using metallic or optical fibre cables. Licensing, legislative, regulatory and certification requirements apply to working at heights. If an elevated work platform (EWP) is required, verify state or territory law requirements for a licence to operate an EWP. Users should confirm requirements with the relevant federal, state or territory authority. If working at heights, achievement of the unit 'CPCPCM2015A Work safely on roofs' from the CPC08 Construction and Plumbing Services Integrated framework training Package fulfils this requirement.

Application of the Unit

Application of the unit	Telecommunications linesmen and line installers apply the skills and knowledge in this unit. It may make use of support anchors and catenaries. They may be required to do new installations, upgrades or maintain existing networks in domestic, commercial and industrial installations to deliver services in x-digital subscriber line (xDSL), fibre to the home (FTTH) and hybrid fibre coaxial (HFC) networks.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for aerial cable installation	1.1. Obtain construction plan from ***appropriate personnel*** to scope the work and arrange for site access 1.2. Notify appropriate personnel of identified ***safety hazards*** at the cabling worksite 1.3. Determine cable route and type of ***cable*** from construction plan identifying and avoiding ***other services*** 1.4. Obtain ***plant***, ***tools***, ***safety equipment*** and material to perform tasks safely and efficiently
2. Install aerial cable	2.1. Use tools according to enterprise guidelines and occupational health and safety (***OHS***) ***regulations*** 2.2. Install ***catenary wire*** or gantry wire or integral bearer cable (IBC) and ***tension*** to required specifications 2.3. Install cable according to ***manufacturer's and enterprise guidelines*** ensuring that no damage is caused and that the physical characteristics of the cable are maintained 2.4. Secure cable permanently to support structure using ***aerial fixing devices*** according to manufacturer's and enterprise guidelines 2.5. Number the cables on towers according to enterprise guidelines
3. Terminate, seal and secure aerial cable	3.1. Terminate and seal cables according to manufacturer's specifications 3.2. Joint cable in suitable closures using enterprise guidelines 3.3. Loop and secure cable on support structure with bending radius tolerance for cable materials to reduce damage to conductors 3.4. Test cable for continuity and rectify fault if required 3.5. Record test results for future reference
4. Complete project	4.1. Complete reports on installation and design amendments and file according to enterprise requirements 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

ELEMENT	PERFORMANCE CRITERIA
	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:
  - complete reports in a given format
  - read and interpret drawings, plans and specifications
- numeracy skills to take and use measurements
- planning and organisational skills to organise and maintain equipment
- problem solving skills to solve logistics problems
- task management skills to work systematically with required attention to detail and adherence to all safety requirements
- technical skills to:
  - use hand and power tools
  - use diagnostic equipment
  - rectify fault

Required knowledge

- features and operating requirements of cable test equipment
- information required to operate equipment according to a test specification
- installation of a range of aerial cable types
- legislation, codes of practice and other formal agreements that impact on the work activity
- licence requirements for working at heights
- manufacturer's requirements for safe operation of equipment
- 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

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.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the ability to: • install an aerial cable, including hauling aerial cable, cable securing and sealing • identify safe support structures from pole status markings, visual inspection or approved testing procedures • use specialised hand or power tools and equipment for installing aerial cable safely • apply all related OHS requirements and work practices associated with installing aerial cable pole and ladder safety • comply with all related OHS requirements and work practices.
Context of, and specific resources for assessment	Assessment must ensure: • sites where aerial cable may be installed • use of plant, tools and equipment to erect aerial cable currently used in industry • relevant regulatory and equipment documentation that impact on aerial cable installation activities.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • review of an aerial cable installed by the candidate • direct observation of the candidate installing aerial cables • oral or written questioning to assess required knowledge and skill.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTCBL2132A Erect aerial cable supports. Aboriginal people and other people from a non-English

EVIDENCE GUIDE	
	speaking background may have second language issues. Access must be provided to appropriate learning and assessment support when required. 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. 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. Where applicable, physical resources should include equipment modified for people with special needs.

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.	
Appropriate personnel may include:	• customer representative • project manager • site manager.

Safety hazards may refer to:	• access points that may contain:
	  • hazardous light (non-visible laser)
	  • radio frequency (RF) emission
	• contact with remote power feed
	• electrical supply and areas of earth potential

RANGE STATEMENT	

	rise that require mandatory separation from communications cable
	• hazardous conduit as according to AS 1345:1995 conduit colours associated with a hazardous service
	• unsafe support structures:
	  • condemned poles
	  • visible signs of decay or stress
	• unsafe weather:
	  • heavy rains
	  • high winds
	  • severe heat or cold
	  • thunderstorms.

Cable may include:	• coaxial • data cabling • distribution cable • lead-in cable • multi-pair copper • optical fibre • radio feeder.
Other services may include:	• availability and suitability of existing cabling trays and fixing systems • fire sprinkler systems • gas and water mains • high voltage (HV) power.

Plant, ***tools***, ***safety equipment*** may include:	• plant:
	  • cherry picker
	  • elevated platform vehicle
	  • ladders
	  • scissor lifts
	  • wire raising tool (insulated)
	• safety equipment:
	  • flashing lights
	  • gas and other hazard detection equipment
	  • personal protective clothing:
	  • earmuffs
	  • fall arrest systems
	  • gloves
	  • head protection

RANGE STATEMENT	
	• kneepads • masks • protective suits • safety boots • safety glasses • safety barriers • trench guards • warning signs and tapes • test equipment: • cable tester • continuity tester • local area network (LAN) Cat tester • passive optical network (PON) meter • tools: • auger • cable tensioner • fixing brackets • height measuring device • spanner.
OHS regulations may include:	• appropriate licences: • crane • EWP • forklift • winch • 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

RANGE STATEMENT	
	• OHS • road and traffic control legislation and codes technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.
Catenary wire may refer to:	• integrated or installed separately to cable • constructed of steel: • single or multi-stranded depending on cable size.
Tension may be specified by:	• enterprise • manufacturer • power company.
Manufacturer's and enterprise guidelines refer to:	• cable loop being bent within bending radius tolerance for cable materials • maintaining long enough cable end for jointing, maintenance and water drip points requirements • provision for expansion of hard-line cable made according to manufacturer's specifications.
Aerial fixing devices may include:	• bolts and lugs • clamps • hooks • mounts • riser pipes • screw hooks.

Unit Sector(s)

Unit sector	Telecommunications

Co-requisite units

Co-requisite units		

Co-requisite units		

Competency field

Competency field	Cabling