



Australian Government

Department of Education, Employment and Workplace Relations

ICTCBL3021A Install aerial cable

Release: 1

ICTCBL3021A Install aerial cable

Modification History

Not Applicable

Unit Descriptor

<p>Unit descriptor</p>	<p>This unit describes the performance outcomes, skills and knowledge required to install aerial cable in all communications applications.</p> <p>Assessment by a TITAB registered assessor is recommended.</p> <p>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.</p> <p>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.</p>
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Application of the Unit

<p>Application of the unit</p>	<p>Technical staff who install aerial cable for customer and hybrid fibre coaxial (HFC) networks apply the skills and knowledge in this unit. They use basic rigging procedures, methods and equipment for working safely at height.</p> <p>It may make use of formal documentation such as accurate completion of a telecommunications cabling advice (TCA) form (TCA1 form) and cable records.</p> <p>This unit applies to outdoor installation within a customer premises.</p> <p>It may be applied to domestic, commercial or 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.</p>
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for aerial cable installation	1.1. Prepare for given work according to relevant legislation, codes, regulations and standards 1.2. Arrange access to the site according to required procedure 1.3. Verify location of proposed aerial cable installation requirements according to the appropriate plans and recognise constraints 1.4. Obtain information on location of other services from relevant authorities 1.5. Inform appropriate personnel of existing and potential hazards on worksite 1.6. Select tools and equipment required for safe work practice 1.7. Erect barriers according to safety requirements 1.8. Assess support structure as safe for normal working conditions 1.9. Set up cable installation equipment according to manufacturer's requirements and enterprise guidelines
2. Attach aerial cable to catenary	2.1. Select type of cable bearer for catenary wire installation 2.2. Use basic rigging procedures, methods and equipment for working safely at heights 2.3. Secure catenary wire or bearer wire permanently to support structure using safe installation practices according to specifications 2.4. Haul and secure cable to catenary wire following occupational health and safety (OHS) and environmental requirements
3. Seal and secure aerial cable	3.1. Seal cable ends to prevent ingress of foreign material 3.2. Secure cable loop on support structure to reduce damage to conductors and to enable ease of access for maintenance 3.3. Weather seal building entry points where appropriate 3.4. Fit over-voltage protection devices to all cables with metallic component where required 3.5. Complete reports on installation and design amendments accurately and file promptly according

ELEMENT	PERFORMANCE CRITERIA
	to enterprise requirements
4. Restore site and complete documentation	4.1. Restore worksite to the customer's satisfaction 4.2. Complete <i>reports</i> on installation 4.3. 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
 - relate to work associates, supervisors, team members and clients
- literacy skills to interpret technical documentation, such as equipment manuals, specifications and requirements for aerial cable installation
- 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
- technical skills to use:
 - hand and power tools, diagnostic equipment and perform fault clearance
 - basic rigging procedures, methods and equipment for working safely at heights

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
- legislation, codes of practice and other formal agreements that impact on the work activity

REQUIRED SKILLS AND KNOWLEDGE

- 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	
<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>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • prepare site for installation ensuring all relevant authorities have been notified and approvals obtained prior to commencement • install aerial cable using effective practices • use basic rigging procedures, methods and equipment for working safely at heights • comply with all related OHS requirements and work practices.
Context of, and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> • sites where aerial cable installation may be conducted • use of aerial installation equipment currently used in industry • relevant regulatory and equipment documentation that impact on aerial cable installation activities.
Methods of assessment	<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, including updated cable plans and records • direct observation of the candidate installing aerial cable.
Guidance information for assessment	<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"> • ICTCBL3020A Construct aerial cable supports. <p>Aboriginal people and other people from a non-English speaking background may have second language issues.</p>

EVIDENCE GUIDE	
	<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

RANGE STATEMENT	
<p>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>	
<p><i>Relevant legislation, codes, regulations and standards</i> may include:</p>	<ul style="list-style-type: none"> • appropriate licences: <ul style="list-style-type: none"> • crane • EWP • forklift • winch • Australian Communications Industry Forum (ACIF) standards and codes • AS Communications Cabling Manual (CCM)

RANGE STATEMENT	
	<p>Volume 1</p> <ul style="list-style-type: none"> • 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 • OHS • road and traffic control legislation and codes • technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.
<i>Aerial cable installation requirements</i> may include:	<ul style="list-style-type: none"> • approvals from relevant authorities • details of: <ul style="list-style-type: none"> • location of other services • location of plant and equipment • proposed route • reinstatement requirements • site access requirements • joint use with electrical services • regulated or industry codes of practice and include appropriate ACMA technical standards • structures that may be public or private • use of: <ul style="list-style-type: none"> • pole • tower • wall.
<i>Plans</i> may include:	<ul style="list-style-type: none"> • building • construction • design • site layout drawings • street.
<i>Constraints</i> may include:	<ul style="list-style-type: none"> • availability of cable size and type • condition of poles • earth potential rise (EPR):

RANGE STATEMENT	
	<ul style="list-style-type: none"> • event at a site, such as an electrical distribution substation, may expose telecommunications personnel, users or plant to hazardous voltages • optical cable may contain a hazardous light • radio frequency (RF) equipment may emit hazardous radiation • remote power feeding which operate at above telecommunications network voltage (TNV) • site conditions.
Relevant authorities may include:	<ul style="list-style-type: none"> • cable location services (Dial Before you Dig) • environment protection • local government • private owners • utility providers such as: <ul style="list-style-type: none"> • electricity • fire services • gas • telecommunications providers • water.
Hazards may include:	<ul style="list-style-type: none"> • EPR • optical cable: <ul style="list-style-type: none"> • bare fibres • hazardous laser light • remote power feeding • RF emission.
Tools and equipment may include:	<ul style="list-style-type: none"> • hand tools such as: <ul style="list-style-type: none"> • crowbar • glue • hammers • pick • saws • shovels • mechanical equipment such as: <ul style="list-style-type: none"> • auger • borer • concrete gutter • EWP • ladders

RANGE STATEMENT	
	<ul style="list-style-type: none"> • mole plough • trenching machine.
Barriers may include:	<ul style="list-style-type: none"> • flashing lights • trench guards • warning signs and tapes • witches hats.
Support structure as safe may refer to:	<ul style="list-style-type: none"> • condemned pole status markings • suitable testing methods • visible signs of decay or stress.
Cable may include:	<ul style="list-style-type: none"> • Category 5 • Category 6 or 6A • Category 7 or 7A • coaxial • copper • optical fibre.
Specifications include:	<ul style="list-style-type: none"> • cable compliant with appropriate ACMA technical standard requirements • cabling products other than cable must be ACMA-approved • regulated or industry codes of practice and include appropriate ACMA technical standards • relevant legislation, codes, regulations and standards.
OHS and environmental requirements may relate to:	<ul style="list-style-type: none"> • identifying other services, including power and gas • need for decommissioning and isolating worksite and lines prior to commencement • personal protective clothing: <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

RANGE STATEMENT

	<ul style="list-style-type: none"> • safety harness • safety line • safe working practices, such as the safe use and handling of: <ul style="list-style-type: none"> • asbestos • chemicals • materials • tools and equipment • work platforms • safety equipment: <ul style="list-style-type: none"> • flashing lights • gas and other hazard detection equipment • safety barriers • trench guards • warning signs and tapes • witches hats • special access requirements • suitable light and ventilation • environmental considerations: <ul style="list-style-type: none"> • clean-up protection • noise, dust and clean-up management • stormwater protection • waste management.
<i>Over voltage protection</i> includes:	<ul style="list-style-type: none"> • ACMA standards • hazard requirements including: <ul style="list-style-type: none"> • enterprise • local environmental • manufacturer.
<i>Reports</i> may include:	<ul style="list-style-type: none"> • job cards • plans • worksheets.

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Cabling
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