



Australian Government

ICTCBL237 Install, maintain and modify customer premises communications cabling: ACMA Open Rule

Release: 2

ICTCBL237 Install, maintain and modify customer premises communications cabling: ACMA Open Rule

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to safely install, maintain and modify customer premises communications cabling required according to Australian Communications and Media Authority's (ACMA) 'Open' Cabling Provider Rule for small installations connected to sockets, and larger commercial and industry installations involving many lines, multi-pair cables, backbone cabling, multi-story buildings and advanced termination modules and distributors.

It applies to individuals who provide services in telephony, carrier modems or multiplexers, private modems or data systems operating over a category one or two twisted pair metallic customer cable in a specific customer location and install, maintain or modify new cable or upgrade cable capacity either, indoor, external, underground or aerial cabling on private and public property for an existing network or subsystem, or cabling infrastructure for convergence to Next Generation Networks (NGN).

Work functions in the occupational areas where this unit may be used are subject to regulatory requirements. Refer to the ICT Implementation Guide Companion Volume or the relevant regulator for details of licensing, legislative or certification requirements.

Pre-requisite Unit

ICTCBL236 Install, maintain and modify customer premises communications cabling:
ACMA Restricted Rule

Unit Sector

Telecommunications – Cabling

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the</i>	<i>Performance criteria describe the performance needed to</i>

ELEMENT	PERFORMANCE CRITERIA
<i>essential outcomes.</i>	<i>demonstrate achievement of the element.</i>
1. Plan open cabling work	1.1 Prepare for open cabling work according to the ACMA regulatory environment, cabling environment, cable type, cable identification, termination systems, earthing and protection, records and relevant legislation, codes, regulations and standards 1.2 Identify building infrastructure which places critical constraints on cabling 1.3 Develop strategies to manage other infrastructure in relation to cabling 1.4 Notify appropriate personnel of identified safety hazards at cabling worksite
2. Manage remote power feed	2.1 Identify and avoid the risks posed by contact with remote power feeding services when performing cabling activity 2.2 Make site safe identifying remote power feeding services which operate at above telecommunications network voltage (TNV) inside customer premises
3. Install and modify cable support, earthing and termination infrastructure	3.1 Install fixings and cable support structures of adequate strength, safely and aligned with the environment according to manufacturer's and customer's specifications 3.2 Secure catenary supports to building structure and tension, where necessary, to ensure cable weight can be carried in operating conditions with interference and safety segregation maintained including adherence to current Australian Standards 3.3 Install protective earthing of metal work to industry standards where required 3.4 Inspect installed support structure to ensure cable will not be exposed to damage during installation and general operation 3.5 Position terminating equipment and fixing to accepted industry codes of practice, standards and customer requirements 3.6 Inspect back-mount and outlet layout for compliance to manufacturer's specifications and allow adequate work space for ease of access and avoid overlaying 3.7 Segregate incoming and outgoing cables for ease of access and avoid overlaying
4. Install cables and earth wires	4.1 Install cables according to manufacturer's application specifications, including tension and bending stress requirements 4.2 Identify and avoid sources of possible damage to cable, including hot pipes, sharp edges, cable burn, kinks, crushing or

ELEMENT	PERFORMANCE CRITERIA
	stretching 4.3 Allow sufficient excess at cable ends to facilitate termination 4.4 Label telecommunication outlet ends of cable uniquely to match identifier at originating location 4.5 Place and secure cable to maintain safety and interference segregation according to legislative and industry standards 4.6 Install cable fasteners with correct tension to prevent cable sheath damage or transmission impairment and trimmed or fitted flush to prevent risk of personal damage 4.7 Install aerial cables supported by catenaries in external environment to meet minimum above ground clearances and clearances from hazardous electrical services according to current Australian Standards 4.8 Install underground cables to minimum depth of cover and segregation from hazardous electrical and other services according to current Australian Standards 4.9 Install cables underground (excluding blown fibre tube systems) to incorporate a blocking agent within the cable to prevent the ingress of water 4.10 Install over-voltage protection devices to all cable pairs, where required, according to current Australian Standards, to suppress voltage surges with the devices protectively earthed 4.11 Conduct a visual inspection to verify telecommunications reference conductor (TRC)/ communications earthing system (CES)/ earth wire insulation is protected against damage and TRC/CES/ protective earths segregated according to relevant industry and legislative standards and current Australian Standards
5. Terminate and test cables and earth wires	5.1 Remove cable sheath to allow for correct termination length and without damage to underlying conductors and their insulation 5.2 Install terminating modules to different telecommunications cables according to manufacturer's specifications and cable pairs neatly and sequentially fanned for termination 5.3 Terminate conductors according to recommended colour code sequence using appropriate termination tools in the manufacturer's specified manner 5.4 Earth cable shield, if applicable, to manufacturer's specifications, relevant industry codes of practice and current Australian Standards 5.5 Conduct visual inspection to confirm termination colour code sequence has been followed prior to end-to-end testing of wire and

ELEMENT	PERFORMANCE CRITERIA
	pair termination integrity 5.6 Terminate earth wires with connectors recommended by manufacturers according to accepted industry codes of practice and current Australian Standards 5.7 Ensure earth wire continuity throughout and observe interface requirements with electrical systems 5.8 Test earthing installation for continuity, insulation resistance and conductive resistance according to accepted industry standards including current Australian Standards 5.9 Confirm compatibility of alterations with existing systems and test new work both in isolation and when integrated with existing systems 5.10 Test installed cable continuity after termination
6. Inspect cable route to ensure correct separations	6.1 Inspect separations along the entirety of the cable route and rectify separations which do not comply with regulations 6.2 Install barriers to achieve separations where sufficient spatial separation cannot be met
7. Evaluate earthing needs for cable systems on customer premises	7.1 Locate existing earthing systems in customer premises and analyse the earthing needs of cable products 7.2 Calculate the upper and lower limits of resistance for a variety of cable system earths using relevant cable characteristics
8. Label earthing systems	8.1 Identify label requirements for telecommunications earthing systems 8.2 Attach label to earthing systems according to industry regulations
9. Create or update cable plans and records	9.1 Document installation details on record sheets and plans and store according to customer requirements 9.2 Label cable pairs clearly to provide an accurate identification according to manufacturer's, industry and client standards 9.3 Record cabling details in cable pair record books to provide an accurate record according to industry codes of practice and current Australian Standards 9.4 Complete telecommunications cabling advice (TCA) forms
10. Monitor work activity	10.1 Supervise cablers not holding appropriate registration for the task to ensure installation and maintenance activity comply with legislative requirements and industry standards for safety and

ELEMENT	PERFORMANCE CRITERIA
	network integrity including current Australian Standards

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	4.1, 5.3,	Recognises the structures and distinguishing features of a range of familiar text types
Writing	8.2, 9.1, 9.2, 9.3,	Sequences writing to produce cohesive text and uses layout consistent with text type
Oral Communication	1.4, 10.1	Demonstrates awareness of choices for register, especially in situations that are familiar
Numeracy	3.2, 4.1, 4.3	Interprets and comprehends whole and familiar or routine fractions, decimals and percentages when measuring and preparing cables for installation
Navigate the world of work	1.1, 3.1, 3.2, 4.6, 4.7, 6.1, 9.2, 10.1	Takes personal responsibility for adherence to legal/regulatory responsibilities relevant to own work context, and draws attention to any issues that may affect self or others
Get the work done	1.1, 1.2, 1.3, 2.1, 2.2, 3.1-3.7, 4.1-4.7, 5.1-5.7, 6.1, 6.2, 7.1, 8.1, 8.2,	- 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

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTCBL237 Install, maintain and modify customer premises communications	ICTCBL2137B Install, maintain and modify customer premises	Updated to meet Standards for Training Packages	Equivalent unit

Code and title current version	Code and title previous version	Comments	Equivalence status
cabling: ACMA Open Rule	communications cabling: ACMA Open Rule	Performance criteria clarified	

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICTCBL237 Install, maintain and modify customer premises communications cabling: ACMA Open Rule

Modification History

Release	Comments
Release 2	This version first released with ICT Information and Communications Technology Training Package version 3.1. New release provides updates to Elements and Performance Criteria.
Release 1	This version first released with ICT Information and Communications Technology Training Package version 2.0.

Performance Evidence

Evidence of the ability to:

- identify the correct telecommunications cable by its colour identifier
- terminate systems at both distributor and outlet locations
- install and terminate one jumperable distributor (campus distributor or building distributor) with a capacity of 100 pair or greater
- terminate one non-jumperable distributor (Local Distributor)
- terminate at least one 50 pair and one 4 pair data cable, including accurate completion of installation records, drawing alterations and compliance forms
- place cables on support structures and building faces for both internal and external locations
- secure cables with appropriate fasteners for the above locations
- demonstrate work practices which avoid cable damage
- install at least one common type of earthing system used in customer premises for cabling systems
- read and interpret drawings related to cable layouts, outlet location, cable coding system, and identifiers and distributor locations
- conduct and interpreting cable test results
- interpret and apply relevant legislation, codes, regulations and standards
- comply with all work, health and safety (WHS) requirements and work practices.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- identify Australian Communications and Media Authority's (ACMA) cabling provider rules, cabler registration rules, regulations and standards
- describe the features and operating requirements of recognised cabling specific industry test equipment
- describe the regulatory environment in which cabling can be carried out including:
 - accredited registrars and registration
 - ACMA
 - Certified Components List
 - labelling requirements
- describe the customer cabling environment for which cabling registration may be required for internal, external, above ground or below ground installation
- describe the information required to operate equipment according to a test specification
- identify legislation, codes of practice and other formal agreements that impact on the work activity
- identify and describe the various cable types, their identifiers, termination systems (including jumperable and non-jumperable distributor), separations, support systems and fastening techniques used for telecommunications cabling
- describe important documentation and records required when cabling
- identify the manufacturer requirements for safe operation of equipment
- identify and describe earthing and protection strategies and technologies relevant to different cabling applications
- identify specific WHS requirements relating to the activity and site conditions
- describe test methods and performance requirements
- identify typical issues and challenges that occur on site
- describe devices for a range of telecommunications cabling applications, including, ethernet data systems, audio and video systems, security systems and fire protection systems
- define where integral bearer wires are required according to current Australian Standards
- describe underground cable minimum depth of cover and segregation from hazardous electrical and other services according to current Australian Standards
- describe cable blocking agents within used to prevent the ingress of water underground (excluding blown fibre tube systems)
- describe the feature of cables designed for underground use that may be laid in conduit trenches or direct buried
- describe the responsibilities and process for supervising communications installation works.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the telecommunications – cabling field of work and include access to:

- a site on which communications cabling activities may be carried out
- a jumperable distributor (campus distributor or building distributor) with a capacity of 100 pair or greater
- a patched distributor
- a 50 pair and 4 pair data system
- use of cabling and field equipment currently used in industry
- relevant regulatory and site related documentation.

Note: All client 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 (ACMA) accredited registrar. Assessment by a Telecommunications Industry Training Advisory Board (TITAB) registered assessor is recommended for this unit.

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

Links

Companion Volume implementation guides are found in VETNet -

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