



Australian Government

ICTCMP2239A Perform restricted customer premises broadband cabling work: ACMA Restricted Rule

Release 1

ICTCMP2239A Perform restricted customer premises broadband cabling work: ACMA Restricted Rule

Modification History

Release	Comments
Release 1	This unit of competency first released with <i>ICT10 Integrated Telecommunications Training Package version 2.0</i> .

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to install simple point to point broadband cabling.

Customer cabling work in the telecommunications, fire, security and data industries must be performed by a registered cabler. Cablers are required to register with a registrar accredited by the Australian Communications and Media Authority (ACMA).

Application of the Unit

The unit applies to technical staff who install and terminate customer premises' cable on new installations or upgrades, or maintain existing networks in domestic premises, including small office home office (SOHO) and small commercial premises that do not have a main distribution frame (MDF) or jumperable distributor as the network boundary point.

Broadband cabling involves the range of high performance twisted pair data cables that include Category 5, Category 5e, Category 6 and Category 6A.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

ICTCBL2136A Install, maintain and modify customer premises communications cabling:
ACMA Restricted Rule

Or equivalent industry experience.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	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 installation	1.1 Arrange access to site and organise tools and equipment for specialised broadband cabling for restricted cabling work 1.2 Review site according to work health and safety (WHS) and environmental requirements and assess hazards 1.3 Determine that cable route and cabling environment meet manufacturer specifications, industry standards and regulatory requirements
2. Install broadband cable	2.1 Place and secure correct cable type according to accepted industry practice and relevant regulations and standards 2.2 Maintain cable and services separations in runs and crossovers to meet manufacturer specifications and relevant legislation, codes, regulations and standards 2.3 Fit over-voltage protection devices to cables and metallic components where required
3. Terminate and test broadband cable	3.1 Terminate the cable according to accepted industry practice and relevant legislation, codes, regulations and standards 3.2 Maintain correct twist ratio to optimise system performance at rated level 3.3 Conduct compliance testing of the cable installation and termination with suitable tester and record compliance 3.4 Supply system performance documents to client and complete cabling records

Required Skills and Knowledge

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

Required skills

- communication skills to liaise with supervisors, team members and clients
- literacy skills to interpret:
 - related regulations and standards
 - technical documentation, such as equipment manuals and specifications
- 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:
 - check that environmental conditions are suitable for termination
 - make sites safe and secure for cable installation
 - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- task-management skills to:
 - apply work practices without damaging cable
 - conform to work specifications and relevant industry standards
- technical skills to:
 - check cable route for obstructions and clear route using suitable methods
 - handle cable according to manufacturer specifications so that conductors, sheath and insulation are not damaged during installation
 - select cabling system to meet customer performance needs
 - read and interpret drawings related to:
 - cable layouts
 - outlet location
 - terminate internal copper twisted pair and data cables
 - use applicable testing equipment
 - use hand and power tools.

Required knowledge

- ACMA cabling provider rules, cabler registration rules, regulations and standards
- cable test methods and system performance requirements
- features and operating requirements of applicable test equipment
- information required to operate equipment according to a test specification
- key components of codes of practice and other formal agreements that impact on the work activity
- manufacturer requirements for safe operation of equipment
- specific WHS requirements relating to the activity and site conditions
- techniques for terminating data cable
- typical installation issues and challenges that may occur on site.

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 and terminate fixed broadband cable to industry standards and manufacturer specifications - conduct a successful wire map and data rate qualification test and record test results - provide report to client documenting the installation and test results - comply with all related WHS requirements and work practices.
Context of and specific resources for assessment	Assessment must ensure access to: - sites where installation and termination of cabling may be conducted - use of industry-current tools, testing equipment and personal protective equipment - relevant regulatory and equipment documentation that impacts on 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 a hands-on project completed by the candidate - review of an oral and written report with completed documentation, including test results - direct observation of the candidate installing and terminating coaxial cable.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: - ICTCBL2136A Install, maintain and modify customer premises communications cabling: ACMA Restricted Rule - ICTCBL2139A Apply safe technical work practices for

	cabling registration when configuring an ASDL circuit. 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

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.

Tools and equipment may include:	- tools: - cable ties - coring tool - crimping tool - drills - hammers - labeller - ladders - saws - stripping and preparation tool - terminating tool - torque spanner - equipment: - multimeter - LAN cable qualification tester - LAN cable certification tester - wire map tester.
Cabling may include:	- aerial customer - external customer - indoor customer - underground customer.
Restricted cabling work refers to:	- aerial and underground cabling work on private property - cabling work that is performed only in relation to a customer's premises - customer cabling that terminates directly at the network boundary on a socket or network termination device.
WHS and environmental requirements may include:	- decommissioning and isolating work site and lines before beginning work - environmental considerations: - clean-up protection - stormwater protection - waste management

	• identifying other services, including power and gas • personal protective clothing: • earmuffs • gloves (leather, plastic and rubber) • head protection • kneepads • masks • protective suits • safety boots • safety glasses • safety harness and line • safe work practices, such as the safe use and handling of: • asbestos • chemicals • materials • tools and equipment • work platforms • safety equipment, including: • flashing lights • gas and other hazard-detection equipment • safety barriers • traffic cones • trench guards • warning signs and tapes • special access requirements • suitable light and ventilation.
Hazards may include:	• general hazards, including: • building debris • earth potential rise (EPR) • live power lines • manual handling • mud and water • natural gas and other gas build-up • radio frequency equipment emitting radiation • remote power feeding services that operate at above telecommunications network voltage (TNV) • slippery surfaces • vermin.
Cabling environment	• indoor environments, including concealed locations:

may refer to:	• ceilings and false ceilings • internal wall spaces • modular workstations • under floor • outdoor environments, including cable installations: • aerial telecommunications cabling for restricted cabling work that does not include installations on poles shared with low voltage (LV) or high voltage (HV) electrical power cables or terminations • external walls • underground cabling in an exclusive trench or shared trench with electrical LV cables and other utilities.
Manufacturer specifications may include:	• attenuation rate, or absence of attenuation, for a class of cable in a defined cabling application • bend radius not exceeding manufacturer specification • placement of cable with sufficient slack to allow termination • cable lengths not exceeding manufacturer or design specifications • installation of cable safely without damage to cable or client's premises • use of cable ties and brackets that do not damage cable.
Industry standards and regulatory requirements may include:	• accredited registrars and registration • ACMA Cabling Provider Rules • ANSI/TIA-570-B:2004 North American Design Standard • AS/ACIF S008:2006 and AS/ACIF S009:2006 • AS/NZS 3000:2007 • Australian Communications Industry Forum (ACIF) standards and codes maintained by Communications Alliance • Certified Components List (CCL) • Communications Cabling Manual (CCM) – restricted • IEC 61935-3:2008 International Standard • labelling requirements • Telecommunications Act 1997.
Separations refer to:	• correct separations between communications cable and other services: • low voltage • open terminations • separations covered by AS/ACIF S009:2006.
Over-voltage protection device	• ACMA standards • manufacturer specifications

requirements must comply with:	organisational or local environmental hazards.
Termination may include:	8 pin modular (RJ45 type) connectors terminated at both ends of a fixed broadband cable and tested. *Note: Jumperable distributors and patch panels are outside the scope of cabler registration at this level and so are not included in this work.
Compliance testing must include:	- qualification test of cabling at required data rate (e.g. 100MBs or 1GB) - wire map testing.
Records may include:	- cable plans - network termination device record cards - telecommunication cabling advice forms TCA1 and TCA2.

Unit Sector(s)

Compliance - Telecommunications