Australian Government

Department of Education, Employment and Workplace Relations

ICTTC136C Install, maintain and modify customer premises communications cabling: ACMA Restricted Rule

Release: 1

ICTTC136C Install, maintain and modify customer premises communications cabling: ACMA Restricted Rule

Modification History

Not applicable.

Unit Descriptor

This unit defines the level of competence that is required for the purpose of the Australian Communications and Media Authoritys "**Restricted**" Cabling Provider Rule. Restricted cabling is used in typical domestic premises small office home offices and small business premises situations. Restricted cablers can install cable in large commercial and industrial premises as long as the cabling is behind a compliant device and cabling is not via jumperable distributors or patch panels.
This unit applies to customer cabling terminated on sockets and network termination devices (NTD). It applies to the installation, maintenance and modification of indoor and external cabling at the levels stated in the range of variables.
Customer cabling, for the purpose of this standard, may be used to connect devices for a range of applications including: telecommunications (phones, facsimile and answering machines), simple data and computer use, security alarm panels, and fire control panels.
Assessment by a TITAB registered assessor is recommended.
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Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Nil
Nil

Employability Skills Information

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

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Element	Performance Criteria
1 **Work within the constraints imposed by customer premises**	1.1 Identify building infrastructure which places critical constraints on cabling
	1.2 Develop strategies to manage other infrastructure in relation to cabling
2 **Manage Remote Power Feed**	2.1 Identify the risks posed by contact with Remote Power Feeding services
	2.2 Identify Remote Power Feeding services in a range of commonly encountered circumstances inside customer premises
3 **Install/alter cables and protective earth wires**	3.1 Cables/wires handled in accordance with manufacturer's application specifications including tension and bending stress requirements
	3.2 Sources of possible damage to cable/wires are

		identified and avoided including hot pipes, sharp edges and cable burn
	3.3	Sufficient excess is allowed at cable ends to facilitate termination
	3.4	Cable is placed and secured to maintain safety and interference segregation in accordance with legislative and industry standards
	3.5	Cable ties not tightened to the point of causing cable sheath damage or transmission impairment and trimmed flush to prevent risk of personal damage
	3.6	Cables installed underground shall meet minimum depth of cover and segregation from hazardous electrical and other services as per AS/ACIFS009:2006
	3.7	Aerial cables installed shall meet minimum clearance, segregation from hazardous electrical and other services and minimum height requirements as per AS/ACIFS009:2006
	3.8	In accordance with AS/ACIFS009:2006, overvoltage protection devices are fitted to all cable pairs where required to suppress voltage surges and protect from EPR hazards and the devices protectively earthed
	3.9	Earth wire insulation is protected against damage and protective earths segregated in accordance with relevant industry and legislative standards
4 **Terminate and test cables and earth wires**	4.1	Cable sheath removed to allow for correct termination length and without damage to underlying conductors and their insulation
	4.2	NTD terminating modules are installed in accordance to manufacturer's specifications and cable pairs neatly and sequentially fanned for termination
	4.3	Conductors are terminated in accordance with recommended colour code sequence using appropriate termination tools in the manufacturer's specified manner

		4.4 Cable shield (if applicable) is earthed to manufacturer's specifications and relevant industry codes of practice and AS/ACIFS009:2006
		4.5 Visual inspection is undertaken to confirm termination colour code sequence has been followed prior to end to end testing of wire and pair termination integrity
		4.6 Earth wires are terminated with connectors recommended by manufacturers in accordance with accepted industry codes of practice and AS/ACIFS009:2006
		4.7 Earth wire continuity is maintained through out and interface requirements with electrical systems are observed
		4.8 Earthing installation shall be tested for continuity, insulation resistance and conductive resistance as per accepted industry standards including AS/ACIFS009:2006
		4.9 Compatibility of alterations with existing systems is confirmed and new wok tested both in isolation and when integrated with existing systems
5	**Inspect cable route to ensure correct separations**	5.1 Check separations along the entirety of the cable route
		5.2 Rectify separations which do not comply with regulations
		5.3 Install barriers to achieve separations where spatial separation can't be met
6	**Create records**	6.1 Complete TCA form and create NTD records
7	**Monitor work activity**	7.1 Supervision of cablers not holding appropriate registration for the task is maintained to ensure installation/maintenance activity is in accordance with legislative requirements for safety and network integrity including AS/ACIFS008:2006 and AS/ACIFS009:2006

Required Skills and Knowledge

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

Required skills

Select from the following list to suit the learning and assessment context
Codes refer to the Skills and Knowledge Register in Volume 3 of this Training Package that has detailed content guidelines for each code outlined.
CA200 Cable Installation
OH210 Occupational Health and Safety
RE210 ACMA Provider Rules, Cabler Registration, Rules and Regulations
TE210 Basic Telephony

Required knowledge

The relevant required knowledge is articulated in the above guidelines contained in the Skills and Knowledge Register included in this Training Package.

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.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: Demonstration of a cabling installation including 3 types of telephone sockets, one network termination device (NTD) and one alarm panel including TCA compliance form Accurate application of cable conductor identification codes Conduct and interpret cable test results Correct interpretation and application of standards and regulations

Context of and specific resources for assessment	Assessment must ensure: A workplace conducting the operations covered by this competency unit, equipment and resources relevant to the context of the work (See Range Statement) and support from a competent supervisor or mentor. OR A simulated environment with similar provisions which conforms to the Assessment Guidelines.
Guidance information for assessment	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 underpinning knowledge.

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.

This unit is generally applied to the ACMA Restricted Cabling Rule coverage which is used in typical domestic premises but is also found in some small office home office and small business premises situations.

Building infrastructure	Includes, but not limited to, High Voltage power, other services, availability and suitability of existing cabling trays and fixing systems
Strategies to manage infrastructure	Includes: appropriate separations, fastening techniques, correct use of cable trays and support systems
Remote Power Feed	Applies to telecommunications services which operate at above TNV (Telecommunications Network Voltage)
Regulatory environment:	Is defined by the Overview **Telecommunications Act 1997**, and includes, ACMA, ACIF/CA, Labelling, Certified Components List (CCL) accredited registrars and registration

Cabling environment may include:	Indoor environments include concealed locations such as: ceilings, false ceilings, internal wall space, under floor, damp situations and within modular workstations Outdoor environments include cable installations on external walls and underground and/or aerial cabling on private property Underground cabling would be in an exclusive trench or shared trench with electrical LV cables and/or other utilities Aerial telecommunications cabling shall not include installations on poles shared with LV/HV electrical power cables/terminations
Cable type:	Includes: copper twisted pair including indoor, external, aerial and underground
Cable identification	Refers to cable conductor identification codes and may be: Colour coded, banded, numbered, lettered
Termination systems:	Includes: a range of at least 3 different socket types (Australian and US modular sockets and Mode 3 alarm sockets) and at least one network terminating device (NTD) must be individually terminated. Note: Jumperable distributors not included in this unit requirement.
Earthing and protection	Refers to earthing for protection and surge suppression and must be treated in accordance with AS/ACIFS009:2006

Separations	Is the distance between communications cable and other services. This includes Low Voltage (LV), High Voltage (HV) - Single core and HV Multi-core, Open terminations
Regulations	Cover separations will generally be covered by Wiring Rules standard AS/ACIFS009:2006
Spatial separations	Is the distance between communications cable and other cable required by regulations where no barrier is installed
Barriers	Refers to physical barriers installed when there is not enough space to achieve spatial separations
Records:	Is a TCA form (and future NTD record cards) must conform with AS/ACIFS009:2006
Relevant legislation, codes, regulations and standards (or their replacements)	Include relevant components of: ACMA Technical Standards AS/ACIFS008:2006, AS/ACIFS009:2006 - or subsequent replacements SAA Communications Cabling Manual (Restricted) AS/NZS 3000

Unit Sector(s)

Not applicable.