



Australian Government

Department of Education, Employment and Workplace Relations

ICTTC136B Install, maintain and modify customer premises communications cabling: ACA Restricted Rule

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit defines the level of competence that is required for the purpose of the Australian Communications Authority's "**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.

Prerequisite Units: Nil

Equivalent Units: Nil

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Prerequisite Units: Nil

Equivalent Units: Nil

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

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Element	Performance Criteria
1 Work within the constraints imposed by commercial 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/ACIF009
 - 3.7 Aerial cables installed shall meet minimum clearance, segregation from hazardous electrical and other services and minimum height requirements as per AS/ACIF009
 - 3.8 In accordance with AS/ACIF009, 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/ACIF009
 - 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/ACIF009
 - 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/ACIF009
 - 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 TCA1 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/ACIF008 and AS/ACIF009

Required Skills and Knowledge

Not applicable.

Evidence Guide

Assessment location and resources

Either

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.

Critical evidence

Assessment candidates should produce evidence of the following:

Demonstration of a cabling installation including 3 types of telephone sockets, one network termination device (NTD) and one alarm panel including TCA1 compliance form.

Accurate application of cable conductor identification codes.

Conduct and interpret cable test results.

Correct interpretation and application of standards and regulations.

Skills and knowledge

Codes refer to the Skill and Knowledge Register included in this training package:

CA2200 Cable Installation

OH2200 Occupational Health and Safety

RE210 ACA Provider Rules, Cabler Registration, Rules and Regulations

TE2210 Basic Telephony

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Range Statement

The following statements cover a wide range of circumstances. Assessment of candidates should be within the range that applies to the candidate's particular role or workplace. This unit is generally applied to the ACA 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 include:

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

Overview **Telecommunications Act 1997**, ACA, ACIF, Labelling, Certified Components List (CCL) accredited registrars and registration.

Cabling environment

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

Copper twisted pair including:

indoor

external

aerial, and

underground.

Cable identification

Cable conductor identification codes may be:

colour coded

banded

numbered

lettered.

Termination systems:

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

Earthing for protection and surge suppression and must be treated in accordance with AS/ACIF009.

Separations

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

Regulations cover separations will generally be covered by Wiring Rules standard AS/ACIF009.

Spatial separations

The distance between communications cable and other required by regulations where no barrier is installed.

Barriers

Physical barriers installed when there is not enough space to achieve spatial separations.

Records

TCA1 form (and future NTD record cards) must conform with AS/ACIF009.

Relevant legislation, codes, regulations and standards (or their replacements) include relevant components of:

ACA Technical Standards

AS/ACIF008, AS/ACIF009 - or subsequent replacements

SAA Communications Cabling Manual (Restricted)

AS/NZS 3000

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Unit Sector(s)

Not applicable.