



Australian Government

ICTCBL242 Install functional and protective telecommunications earthing system

Release: 1

ICTCBL242 Install functional and protective telecommunications earthing system

Modification History

Release	Comments
Release 1	This version released with ICT Information and Communications Technology Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to install telecommunications earthing system to metallic frames, utilised for telecommunications systems that include digital and analog, telephony, data, video, digital broadcasting, computer networks, local area networks (LANs), wide area networks (WANs) and multimedia.

It applies to telecommunications technicians and field officers who install indoor or outdoor earthing systems for domestic, small office home office (SOHO), commercial or industrial multi-storey and multi-site locations within customer premises.

Licensing, legislative, regulatory and certification requirements apply to telecommunications earthing systems. All customer 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 Authority (ACMA) accredited registrar.

Unit Sector

Telecommunications – Cabling

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to install telecommunications earthing system	1.1 Access site according to customer and individual site requirements 1.2 Select earth wire for purpose intended according to specifications and current Australian Standards 1.3 Establish location of earthing applications, eliminating risks posed by contact with remote power feeding services 1.4 Select route to minimise interference to system performance and

ELEMENT	PERFORMANCE CRITERIA
	according to safe work practices 1.5 Select earthing materials to comply with relevant industry standards
2. Install and secure earth cable	2.1 Maintain cable separations to meet performance requirements of application environment 2.2 Check earth cable insulation is undamaged to ensure integrity of earth provided 2.3 Connect the main protective earth (PE) cable to the nearest electrical switch board then isolate PE cable, beyond the main distribution frame (MDF) link bar from functional earth and telecommunication reference conductors (TRC) at all times to ensure operation according to industry standards 2.4 Install and secure cable according to work health and safety (WHS) and environmental requirements, manufacturer specifications and industry standards
3. Terminate and test earth cable installation	3.1 Terminate earth with connectors recommended by manufacturer and according to industry standards 3.2 Maintain earth continuity at all times to ensure safe and reliable system operation 3.3 Maintain correct interface requirements with electrical systems according to industry standards 3.4 Test earthing system according to ACMA wiring rules in safe manner 3.5 Rectify earth system faults, as required, prior to re-testing
4. Complete task and documentation	4.1 Label earthing systems according to industry regulations 4.2 Complete documentation, including test records 4.3 Clean up and restore worksite 4.4 Notify customer and obtain sign-off

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance, but not explicit in the performance criteria.

Skill	Description
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Skill	Description
Reading	• Recognises when unknown words are essential to meaning and uses a range of decoding strategies to identify them • Recognises the structures and distinguishing features of a range of text types
Writing	• Produces a range of text types (familiar and some unfamiliar) with appropriate structures
Oral Communication	• Demonstrates awareness of choices for register, especially in situations that are familiar
Navigate the world of work	• Takes personal responsibility for adherence to legal and regulatory responsibilities relevant to own work context, and draws attention to any issues that may affect self or others • Recognises and follows explicit and implicit protocols and meets expectations associated with own role
Get the work done	• Automatically implements standard procedures for routine decisions • Initiates standard procedures when responding to familiar problems within immediate context

Unit Mapping Information

ICTCBL242 Install functional and protective telecommunications earthing system supersedes and is equivalent to ICTCBL204 Install functional and protective telecommunications earthing system.

Links

Companion Volume Implementation Guides are available from VETNet -

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

Assessment Requirements for ICTCBL242 Install functional and protective telecommunications earthing system

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Performance Evidence

The candidate must demonstrate the ability to perform the tasks outlined in the elements, performance criteria, and foundation skills, and to:

- evaluate earthing needs for cable systems on customer premises
- determine potential earthing locations
- comply with all related work health and safety (WHS) and environmental requirements and work practices
- determine earth route and support system
- install earth to a backmount, rack or enclosure
- manage remote power feed services.

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

Knowledge Evidence

The candidate must demonstrate the knowledge required to perform the tasks outlined in the elements, performance criteria, and foundation skills, which includes knowledge about:

- legislation, regulations, codes, standards, rules, guidance notes and other formal agreements that impact on work, in particular:
 - wiring rules
 - mandatory and voluntary technical standards
 - Australian Communications and Media Authority (ACMA) competency requirements for Telecommunications Cabling Provider Rules
 - national and state/territory WHS requirements
 - workplace and worksite requirements
- specific WHS and environmental requirements relating to the activity and site conditions, including typical safety issues and challenges that occur on site
- features and operating requirements of test equipment

- information required to operate equipment according to a test specification
- types of location in which installations may be required
- manufacturer requirements for safe operation of equipment
- test methods and performance requirements
- purpose, construction, and characteristics of types of cable used in performance evidence
- cable screening types
- recognition of colour codes
- electrical earthing applications including electrical bonding and equipotential bonding
- earth systems with functionality including elimination of interference from electromagnetic, radio frequency (RF) and power sources, and reduction of interference from electromagnetic RF and power sources.
- switching systems earthing requirements
- basic telephony including operation.

Assessment Conditions

Skills must be assessed in a workplace or simulated environment where conditions are typical of those in a telecommunications work environment or workplace.

Access is required to:

- special purpose tools, equipment and materials
- a relevant telecommunications earthing system
- cable plans and records.

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

Work functions in the occupational areas where this unit may be used are subject to regulatory requirements. Refer also to the *Requirements for assessors* in the ICT Information and Communications Technology Training Package Companion Volume Implementation Guide.

Links

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