



Australian Government

Department of Education, Employment and Workplace Relations

ICTCBL3013A Perform cable and system test on customer premises

Release: 1

ICTCBL3013A Perform cable and system test on customer premises

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to test the performance of equipment on customer premises for the purpose of commissioning, fault identification or routine maintenance. It includes ensuring a safe and secure work environment while work is being undertaken. Assessment by a TITAB registered assessor is recommended. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.
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Application of the Unit

Application of the unit	Field officers, technicians or technical supervisors from carriers, contractors or other service providers may apply the skills and knowledge in this unit. This unit applies to indoor and outdoor cable and systems within customer premises. It may be applied to domestic, commercial or industrial installations. Communications applications include digital and analog, telephony, data, video, digital broadcasting, computer networks, local area networks (LAN), wide area networks (WAN) and multimedia.
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	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

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for cable and system test	1.1. Establish <i>purpose of the test</i> to be conducted on <i>cables and systems</i> with <i>customer</i> 1.2. Confirm <i>customer's requirements</i> and methods to comply with <i>relevant legislation, codes, regulations and standards</i> 1.3. Select <i>required tests</i> according to site conditions, client documentation and <i>manufacturer's specifications</i> 1.4. Arrange access to site and confirm service is available for testing 1.5. Select <i>test equipment</i> , tools and materials to meet required industry standards
2. Perform tests	2.1. Use tools and test equipment according to manufacturer's specifications 2.2. Perform work safely to remove risk of injury to operator, other users and equipment 2.3. Perform checks and adjustments to ensure operating <i>environmental factors</i> will not prejudice test results
3. Interpret test results and determine action	3.1. Read <i>test results</i> accurately and compare with manufacturer's and site specifications for cable performance 3.2. Evaluate test results taking into account measurement error margins against a known reference where appropriate 3.3. Assess test results fairly and accurately using verifiable data 3.4. Rectify any faults or escalate to the appropriate level
4. Complete records and clean up site	4.1. Document test results and ensure test results remain current 4.2. Verify test results and provide to client where required 4.3. Update site and installation files to ensure information on system performance is traceable 4.4. Reinstate site according to customer and company requirements 4.5. Notify customer and obtain sign off

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- analytical skills to interpret test equipment settings and readings
- communication skills to liaise with customers to ensure requirements are known and can be met within timeframes
- literacy skills to interpret technical specifications and related documentation
- numeracy skills to make calculations and necessary calibration changes
- planning and organisation skills to arrange site access and equipment delivery arrangements according to schedule
- safety awareness skills to:
 - apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
 - select and use required personal protective equipment conforming to industry and occupational health and safety (OHS) standards
 - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- technology skills to correctly handle, connect and calibrate test equipment

Required knowledge

- cabling types, connectors and cabling structures
- connections to carrier infrastructure or equipment, such as main distribution frame (MDF) or customer interface units (CIU)
- electrical and/or optical properties to be measured
- overview knowledge of customer premises equipment
- typical performance parameters and typical faults that may be encountered in customer equipment and related connection and transmission media
- various test equipment types suitable for tests to be made

Evidence Guide

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:

- perform tests on cable and equipment
- use a range of test devices
- interpret test results
- rectify a range of faults and escalate to the appropriate level if required
- report on the completed cable and system test.

Context of and specific resources for assessment

Assessment must ensure:

- sites where cable and system tests may be conducted
- use of cable and system testing equipment currently used in industry
- relevant regulatory and equipment documentation that impact on cable and system testing 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:

- direct observation of the candidate performing cable and system test on customer premises
- review of reports completed by the candidate for different test examples and situations
- oral or written questioning to assess knowledge of cable and systems tests.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- ICTCBL3015A Locate and identify cable system faults.

Aboriginal people and other people from a non-English speaking background may have second language issues.

EVIDENCE GUIDE

	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.
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Range Statement**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.

<i>Purpose of the test</i> may relate to :	• commissioning • extent of functionality • fault identification • need to assess continuity • poor performance.
<i>Cables and systems</i> may include:	• cable types: • coaxial • copper (all categories) • optical fibre • compliance with ACMA technical standard requirements for cable:

RANGE STATEMENT	
	• Category 5, 6, 6A, 7 or 7A • aerial • underground • unshielded twisted pairs (UTP) • requirement that all cabling products other than cable must be ACMA approved • systems: • LAN or WAN equipment • modems • private branch exchange (PBX) • related cabling and management systems • transmission equipment.
Customer may include:	• building owner • clients • consultants • end user • supervisor.
Customer's requirements may include:	• special access to worksites, such as: • chemical plant • radio hazard situations • rail corridor • under high voltage (HV) power lines.
Relevant legislation, codes, regulations and standards include:	• Australian Communications Industry Forum (ACIF) standards and codes • AS Communications Cabling Manual (CCM) Volume 1 • AS/NZS 3000:2007 • AS/NZS 3080:2003 • AS/NZS IEC 61935.1:2006 • AS/NZS ISO/IEC 14763.3:2007 • AS/NZS ISO/IEC 15018:2005 • AS/NZS ISO/IEC 24702:2007 • cabling security codes and regulations • National Association of Testing Authorities (NATA) requirements • OHS • technical standards AS/ACIF S009:2006 and AS/ACIF S008:2006.
Required tests may be:	• addressing the following:

RANGE STATEMENT	
	• attenuation • balance • expected response times • insulation resistance • length • near end cross talk • noise levels • open circuits • pair assignment • reflection • reversals • short circuits • signal loss • speed balanced • between a site and other customers equipment • between sites • one or two directional • unbalanced • within a building.
<i>Manufacturer's specifications</i> may include:	• diagnostic procedures • installation instructions • maintenance schedule • warranty conditions.
<i>Test equipment</i> may include:	• hand-held cable testers • insulation resistance tester • multimeter • oscillator and probe set • optical time domain reflectometer (OTDR) • proprietary devices • pulse echo • signal generator • signal level meter • spectrum analyser • time domain reflectometer (TDR).
<i>Environmental factors</i> may include:	• dirt • dust • humidity • magnetic radiation • radio frequency (RF)

RANGE STATEMENT	
	• safety of electrical equipment • temperature • trip hazards • vibration.
<i>Test results</i> may include:	• distortion measurements • end to end transmissions • insertion loss measurements • optical continuity • return loss measurements.

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Cabling
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