



Australian Government

**Assessment Requirements for ICTCBL332
Locate, identify and rectify copper cable
faults**

Release: 1

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Modification History

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

Performance Evidence

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

- discuss faults with customers and appropriate personnel
- identify a minimum of three different types of faults when testing telecommunications cables
- analyse test results and identify and rectify a minimum of three different types of faults
- use systematic, logical and appropriate fault-finding techniques for field-testing situations
- comply with all related work health and safety (WHS) requirements and work practices.

Note: Evidence must be provided at least once when a specific volume or frequency is not stated.

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:

- WHS and environmental requirements
- basic communications testing and measuring devices and techniques including:
 - types and applications of testing/measuring devices including voltage testers, multimeters, copper time domain reflectometers (TDRs), bridge meggers, continuity testers and insulation resistance testers
 - features of testing/measuring devices including user calibration, parameter and range settings
 - safety procedures
 - circuit arrangement of test/measuring devices
 - readings
 - storage, maintenance and care of test/measuring devices

- Australian Standard quality assurance requirements for test equipment calibration certification
- carrier copper network, architecture and cable layout including:
 - seven different types of fault conditions that may affect a customer service in terms of how information is carried
 - continuity of a circuit to facilitate a customer service
 - types of network components and terminal points such as cabinets, pillars, main distribution frames, internal distribution frames, pits, manholes and joints
 - different types of joints (inline, single-ended, pressurised and unpressurised)
- performance parameters associated with copper cables including:
 - electrical circuit characteristics of voltage, current and resistance/impedance
 - open circuit, short circuit and pair continuity
 - split legs, reversed legs, contacts, earths and foreign battery
 - attenuation
 - insulation resistance (leakage)
 - loop resistance
 - characteristic impedance
- how to evaluate test results for compliance with carrier requirements for copper cables including:
 - tests required to evaluate a given performance parameter
 - test equipment and leads needed to evaluate a given performance parameter
 - operation of test equipment for correct evaluation of specific cable performance parameters and to obtain accurate and reliable results
 - transmission performance requirements
- behaviour of faulty cable network elements, including symptoms and impact on cable network
- systematic and logical fault-finding
- interpretation of test results and cable network element/system specifications
- possible fault positions in a length of cable or buried joint including:
 - joint in a pit
 - manhole
 - buried.

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:

- site/s on which copper cable network testing and fault-finding can be conducted
- line transmission and measurement equipment currently used in industry

- system documentation and other site-related documentation required to conduct tests and fault-finding investigations for a minimum of three different types of faults.

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

Links

Companion Volume Implementation Guides are available from VETNet -

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