



Australian Government

Assessment Requirements for UEERS0019 Test copper rail signalling cables

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including risk control measures
- applying sustainable energy principles and practices
- performing copper rail signalling cable tests, including:
 - checking that technical/operational specifications are met and that cables comply with specifications
 - completing relevant technical reports, records and documentation
 - confirming the integrity of a cable system
 - dealing with unplanned events
 - following relevant codes of practice, procedures and requirements
 - interpreting plans and specifications correctly
 - testing cable in accordance with workplace procedures
 - using test equipment and tools correctly and safely
- preparing to test rail signalling cable
- reporting test results
- testing rail signal cables.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- performance parameters associated with copper cables and coaxial cables, including:
 - attenuation
 - attenuation to cross talk ratio (ACR)
 - characteristic impedance
 - insulation resistance (leakage)

- loop resistance
- near end cross talk (NEXT)
- noise (impulse noise and average noise)
- open circuit, short circuit and pair continuity
- return loss
- split pair and crossed pair
- rail signalling cable testing techniques
- relevant industry standards and requirements relating to results for compliance for structured copper and coaxial cables, including:
 - operation of test equipment for correct evaluation of specific cable performance parameters and to obtain accurate and reliable results
 - test equipment and leads needed to evaluate a given performance parameter
 - tests required to evaluate a given performance parameter
 - transmission performance requirements
 - typical/common causes of non-compliant test results
- relevant manufacturer specifications
- relevant job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace documentation, including:
 - methods for recording and maintaining work records
 - purpose, and extent for maintaining work activities records
 - records required by regulation/regulator
 - types of records for maintaining work activities
- relevant workplace policies and procedures
- structured cabling, including:
 - higher performance cabling
 - shielded twisted pair (STP)
 - twisted pair cabling
 - unshielded twisted pair (UTP)
- sustainable energy principles and practices.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- resources that reflect current industry practices in relation to testing copper rail signalling cables
- applicable documentation, including policy and workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>