



Australian Government

Assessment Requirements for MEM10021 Inspect, test and verify electrical installations

Release: 3

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Modification History

Release 3. Prerequisite units updated

Release 2. Minor adjustments to reflect ERAC requirements for electrician licensing and revision of Essential Performance Capabilities

Release 1. New unit

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- obtaining the relevant work permits and implementing appropriate risk control measures
- identifying and interpreting circuits, drawings, plans and specifications relevant to the work to be undertaken
- preparing and following work plans in accordance with legislative and regulatory requirements and hazard and safety requirements
- reviewing all relevant documentation pertaining to the electrical installation to be inspected and tested
- consulting with all relevant personnel affected by this process
- obtaining the necessary tools, equipment and testing instruments ensuring all instruments are calibrated
- preparing a safe work method statement (SWMS) or job safety analysis (JSA) in the absence of established procedures for effective isolation
- performing a visual inspection ensuring that it meets the requirements of the Australian/New Zealand Wiring Rules – Testing and Verification Visual Inspection Check List
- performing the mandatory and optional circuit tests required for electrical cables in a range of installations and final subcircuits, including:
 - following safe testing procedures
 - testing to show if the earth continuity is sufficiently low
 - testing to show if the insulation resistance is sufficiently high
 - testing to show if the polarity and circuit connections are correct
 - testing to show earth fault-loop impedance is sufficiently low
 - performing testing to verify that residual current devices (RCDs) operate as intended
- identifying and reporting of any non-compliance defect/s and making necessary recommendations in accordance with appropriate procedures

- completing all mandatory documentation in accordance with regulatory and local supply authority requirements.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- isolation and lockout procedures and the purpose and use of SWMS or JSA
- tools, equipment and test instruments needed to conduct electrical installation inspection, testing and verification process
- need for calibration of instruments
- testing procedures, requirements and considerations
- visual inspection of installations for compliance with the Australian/New Zealand Wiring Rules, including:
 - general – protection against direct and indirect contact, hazardous parts, spread of fire and general condition
 - consumers mains
 - switchboards
 - wiring systems
 - electrical equipment
 - earthing
- mandatory tests, including:
 - continuity of the earthing system
 - insulation resistance
 - polarity
 - correct circuit connections
- optional tests, including:
 - fault-loop impedance
 - verification of operation of RCDs
- mandatory documentation and records as required by local supply authority, legislative and regulatory requirements
- documentation for periodic testing and tagging of electrical equipment
- inspection and testing of construction and demolition sites complying with AS/NZS 3012:2010 Electrical installations – Construction and demolition sites, and recording of tests.

Assessment Conditions

- Assessors must:
 - have vocational competency in inspecting, testing and verifying electrical installations at least to the level being assessed with relevant industry knowledge and experience

- satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* and comply with the *National Vocational Education and Training Regulator Act 2011* or equivalent legislation covering VET regulation in a non-referring State as the case requires.
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- 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.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>