



Australian Government

**Assessment Requirements for MEM13017
Apply safety practices, procedures and
compliance standards associated with
licensed electrical work**

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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
- determining the electrical and non-electrical isolation requirements to prevent the creation of hazards linked from the loss of machine/system/process control according to established procedures
- using lock out tag procedures with appropriate tags/signs
- preparing a safe work method statement (SWMS) or job safety analysis (JSA) in the absence of established procedures for effective isolation
- proving electrical isolation and following established safety rules prior to working on electrical equipment or wiring, including capacitor banks
- ensuring all electrical equipment and tools are tested and tagged and up to date
- supervising all electrical apprentices and trainees to the level determined by their training and competence
- working safely at heights and in confined spaces
- applying procedures for movement/treatment of injured, including:
 - safe rescue of victim from a live situation
 - clearing of airways
 - cardio-pulmonary resuscitation (CPR)
 - care of spinal injuries
 - treatment of cuts/lesions
 - treatment of burns/scalds
 - treatment of shock
- accessing and using other relevant standards associated with electrical installation work
- accessing and abiding by codes of practice and other regulatory requirements
- contacting (when appropriate) organisations for guidance and assistance.

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)
- typical hazards and risks in an electrical installation, including:
 - effects on the human body of various levels of alternating current (AC) and direct current (DC) and duration of current flow for various current paths
 - risk of ignition of flammable materials due to the thermal effects of current or electric arcs in normal service of an electrical installation
 - risk of injury from mechanical movement of electrical actuated equipment
 - protection from direct contact (basic protection)
 - acceptable methods
 - use of extra-low voltage (ELV)
- procedures and principles used to control risks associated with these hazards, including:
 - the development of a work health and safety (WHS) policy
 - consultation with everyone involved in the workplace
 - providing information training
 - identifying and assessing hazards
 - implementing and following risk control measures
 - maintaining and improving the WHS program
- approved lock out and tag procedures, including:
 - purpose and use of SWMS or JSA
 - reasons for isolation
 - lock-off equipment and signage
 - tools and equipment to prove electrical isolation of circuit/installation/system including capacitor banks is dead
- testing and tagging guidelines for electrical equipment and tools in accordance with AS/NZS 3760:2010 In-service safety inspection and testing of electrical equipment
- level of supervision required by electrical apprentices and trainees
- safe use of ladders and elevated work platforms, and working at heights
- working in confined spaces, including the following:
 - identification of the hazards
 - assessing the risks
 - controlling the risks
 - emergency procedures
- workplace emergency procedures, including appropriate methods of rescue:
 - removal of the victim of electric shock, including live switchboard rescue from live low voltage conductors
 - release from contact with live high voltage conductors (no attempt should be made until circuit has been switched off)
 - risks associated with fallen distribution lines and the associated voltage gradients

- other points of danger, including:
 - fire
 - traffic
 - risks including chemicals
 - possibility of falls
- life support – CPR procedures, including duty of care
- appropriate use of fire extinguishers for given types of fires
- using carbon dioxide or dry chemical powder to fight electrical fires
- appropriate local medical and rescue services
- recording of first aid delivered
- codes of practice and regulatory requirements, including:
 - Electrical Safety Act or equivalent
 - Electrical Regulations or equivalent
 - Service Rules provided by local electricity distributors
 - Building Code of Australia
- AS/NZS 3000:2007 Electrical installations (known as the Australian/New Zealand Wiring Rules) Part 1 – Scope, application and fundamental principles in regards to the following:
 - scope and application
 - referenced documents
 - definitions
 - alterations, additions and repairs
 - alternative arrangements
 - protection for safety, including:
 - against both direct and indirect contact by use of ELV
 - against direct and indirect contact
 - use of residual current devices (RCDs)
 - thermal effects in normal service
 - unwanted voltages
 - over-current and fault currents
 - over-voltage
 - injury from mechanical movement
 - devices for isolation
 - fire integrity
 - design of an electrical installation, including:
 - protection, functioning and compatibility
 - supply characteristics
 - maximum demand
 - voltage drop
 - electrical installation circuit arrangements
 - external influences

- selection of electrical equipment, including:
 - safety requirements
 - external influences
 - adverse effects and interference
 - evidence of compliance
- installation of electrical equipment, including:
 - safe and sound practice
 - accessibility
 - information and identification
 - segregation
- inspection and testing, including:
 - visual inspection
 - continuity of earthing system
 - insulation resistance
 - polarity
 - correct circuit connections
- knowledge of hierarchy of standards
- normative/informative text
- other relevant standards associated with electrical installation work and testing and tagging of electrical equipment and tools
- Australian/New Zealand Wiring Rules requirements for electricity generation systems installation and electricity converters
- reference compliance standards, including:
 - AS/NZS 4777 (series), Grid connected inverter systems
 - AS/NZS 5033:2014 Installation and safety requirements for photovoltaic (PV) arrays
 - AS/NZS 3010:2005 Electrical installations – Generating sets
 - AS/NZS 4509 (series), Stand-alone power systems
 - AS 3011.1:1992 Electrical installations – Secondary batteries installed in buildings
- fundamental requirements of electricity generating systems, including:
 - DC polarity, including switching and protection devices
 - inverter principles
 - safe isolation and testing of systems
 - arrangement for connecting an alternative supply to an installation
 - earthing arrangements
- battery storage systems and requirements
- uninterruptible power supplies
- organisations that can have an impact of the role of the licensed electrician.

Assessment Conditions

- Assessors must:

- have vocational competency in applying safety practices, procedures and compliance standards associated with licensed electrical work 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>