



Australian Government

**MEM18049 Disconnect/reconnect fixed
wired equipment up to 1000 volts a.c./1500
volts d.c.**

Release: 1

MEM18049 Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.

Modification History

Release 1. Supersedes and is equivalent to MEM18049C Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.

Application

This unit of competency defines the skills and knowledge required to disconnect and reconnect equipment to all voltage levels up to 1000 volts a.c./1500 volts d.c.

Where the selection and use of power tools/hand held operations is required unit MEM18002 Use power tools/hand held operations should also be selected.

Some jurisdictions may require the holder of this unit to be licensed or certified and users should check with the relevant authorities.

Band:

This unit has dual status and is to be regarded as both a specialisation Band A unit and Specialisation Band B unit for progression to C7 (AQF level IV).

Unit Weight: 3

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM10002	Terminate and connect electrical wiring
MEM12002	Perform electrical/electronic measurement
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools

Competency Field

Maintenance and diagnostics

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|-----------------------------------|-----|--|
| 1 | Determine job requirements | 1.1 | Follow standard operating procedures (SOPs) |
| | | 1.2 | Comply with work health and safety (WHS) requirements at all times |
| | | 1.3 | Use appropriate personal protective equipment (PPE) in accordance with SOPs |
| | | 1.4 | Identify job requirements from specifications, drawings, job sheets or work instructions |
| 2 | Disconnect equipment | 2.1 | Determine electrical characteristics of equipment and circuit by reference to circuit drawings, schematics, reference manuals, equipment specifications, identification plate and/or consultation with technical adviser |
| | | 2.2 | Determine and record equipment characteristics, including direction of rotation, where appropriate |
| | | 2.3 | Identify point/s of electrical isolation and isolate equipment in accordance with procedures |
| | | 2.4 | Use all lock-off equipment and signage requirements appropriately |
| | | 2.5 | Prove electrical isolation using appropriate techniques, procedures and test equipment |
| | | 2.6 | Note, record and label conductor layout |
| | | 2.7 | Disconnect conductors and terminate and make safe disconnected cables/connections |
| 3 | Connect equipment | 3.1 | Identify characteristics of the equipment to be connected and determine connection requirements |
| | | 3.2 | Check circuit for safe isolation using appropriate test equipment, procedures and techniques |
| | | 3.3 | Check connections and prepare conductors for |

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	termination 3.4 Connect conductors to equipment in accordance with specifications and regulatory requirements 3.5 Fasten/seal all cables/wires/conduit to specifications 3.6 Remove all lock-off equipment and signage 3.7 Check and test equipment and circuit for compliance with specifications and regulatory and legislative requirements
4 Perform emergency first aid	4.1 Assess situation to identify points of danger to the injured person and potential rescuer 4.2 Undertake rescue/recovery of injured person or provide assistance to injured person in accordance with recognised standards/procedures 4.3 Make contact with the appropriate medical and rescue authorities 4.4 Record details of first aid given

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Equipment includes:

- as defined in the licensing requirements, including electric

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motors, modular sensing switches and limit switches

Electrical isolation includes:

- safe disconnection of all electrical power to equipment or equipment supply circuits via switching, circuit breakers or fuses on circuits/equipment using up to 1000 volts a.c. or 1500 volts d.c. single or multi-phase supply

Test equipment and tools include one (1) or more of the following:

- voltmeters
- multimeters
- tong testers

Connect equipment includes:

- reconnection of existing equipment or the replacement on a 'like for like' basis with no alteration to existing fixed wiring and also includes the original connection of fixed wired equipment

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM18049C Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MEM18049 Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.

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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
- identifying and interpreting specifications, charts, lists, circuit drawings, schematics, regulatory and legislative requirements to disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.
- checking that the electrical equipment is isolated and tagged where necessary in strict accordance with work health and safety (WHS) requirements and procedures using appropriate lock-off equipment and tags/signs
- disconnecting equipment by labelling and recording conductors and making safe disconnected cables/connections using appropriate tools, test equipment, procedures and techniques
- confirming isolation prior to reconnecting fixed wired equipment and checking connections and preparing conductors for termination in accordance with manufacturers' specifications and regulatory requirements
- connecting conductors to equipment and fasten/seal cables/wires/conduits using appropriate procedures and tools to relevant specifications and regulatory requirements
- testing terminated cables to ensure continuity and insulation resistance and complying with following requirements:
 - checking continuity of the protective earth conductor to determine whether it is sufficiently low
 - testing the resistance between the protective earth conductor and the neutral conductor to determine whether it is sufficiently low – not greater than 2 Ohms
 - testing the insulation resistance of active conductors to confirm that it is greater than 1 Megohm
- removing all lock-off devices and signage and checking/testing equipment and circuits for compliance to specifications
- rescuing/recovering of injured person in accordance with appropriate standards/procedures and providing first aid, where appropriate, including contacting the appropriate medical and rescue authorities
- recording details of first aid given.

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)
- basic knowledge of electrical theory for the operation of the circuit/equipment
- relevant regulatory requirements
- procedures for:
 - determining and recording equipment characteristics
 - proving and removing electrical isolation
 - labelling conductors and recording conductor layout
 - disconnecting conductors and terminating disconnected cables/connections
 - terminating conductors and checking connections and specifications that apply
 - connecting conductors to equipment
 - fastening and sealing the cables, wires and conduits and tools, techniques and equipment to be used
 - checking and testing the compliance of the equipment with specifications and tools, techniques and equipment to be used
 - recording first aid
- tools, techniques and equipment required to determine equipment characteristics, prove electrical isolation and disconnect/reconnect and terminate conductors
- point(s) of isolation for the fixed wired equipment and reasons for selecting the chosen isolation point(s)
- safe isolation and proving dead
- range of isolation procedures for the fixed wired equipment
- lock-off equipment and signs to be used and reasons for using and procedures for lock-off equipment and signage
- characteristics of the circuit and the equipment
- operational specifications of the fixed wired equipment
- points of danger to the injured person or potential rescuer
- recognised procedures for the movement and treatment of the injured person, including safe rescue of victim from a live situation, clearing of airways, care of spinal injuries, treatment of cuts/lesions, burns/scalds and treatment of shock
- appropriate local medical and rescue services.

Assessment Conditions

- Assessors must:
 - have vocational competency in disconnecting/reconnecting fixed wired equipment up to 1000 volts a.c./1500 volts d.c. 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* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory 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.

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