



Australian Government

Department of Education, Employment and Workplace Relations

**MEM18049C Disconnect/reconnect fixed
wired equipment up to 1000 volts a.c./1500
volts d.c.**

Release: 2

MEM18049C Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.

Modification History

Single band identifier removed to clarify dual status

Unit Descriptor

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| Unit descriptor | This unit covers connecting and disconnecting equipment. This unit applies to all voltage levels up to 1000 volts a.c./1500 volts d.c. |
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Application of the Unit

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| Application of the unit | <p>This unit applies to disconnection of equipment including electric motors, modular sensing devices and limit switches.</p> <p>Work is performed on site and may include the original connection of fixed wire equipment. All work and work practices are undertaken to regulatory and legislative requirements.</p> <p>Electrical licensing may be required by state authorities. If power tools are used, Unit MEM18002B (Use power tools/hand held operations) must also be selected.</p> <p>Where installation and testing of electrical wiring and circuitry up to 1000 volts a.c. and 1500 volts d.c. is required Unit MEM10003B (Install and test electrical wiring and circuits up to 1000 volts a.c./1500 volts d.c.) must be selected.</p> <p>Band:</p> <p>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).</p> <p>Unit Weight: 3</p> |
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Licensing/Regulatory Information

Refer to Application of the Unit

Pre-Requisites

| Prerequisite units | | |
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| | MEM09002B | Interpret technical drawing |
| | MEM10002B | Terminate and connect electrical wiring |
| | MEM12002B | Perform electrical/electronic measurement |
| | MEM18001C | Use hand tools |

Employability Skills Information

| Employability skills | |
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| | This unit contains employability skills. |

Elements and Performance Criteria Pre-Content

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| Elements describe the essential outcomes of a unit of competency. | Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide. |
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Elements and Performance Criteria

| ELEMENT | PERFORMANCE CRITERIA |
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| <p>1. Disconnect equipment</p> | <p>1.1. Electrical characteristics of equipment and circuit are determined by reference to circuit drawings, schematics, reference manuals, equipment specifications, identification plate and/or consultation with technical adviser.</p> <p>1.2. Where appropriate, equipment characteristics are determined and recorded to standard operating procedures (rotation etc.).</p> <p>1.3. Point/s of isolation are identified using correct and appropriate procedure.</p> <p>1.4. Equipment is isolated using correct and appropriate techniques and procedures.</p> <p>1.5. All lock-off equipment and signage requirements are used correctly and appropriately.</p> <p>1.6. Electrical isolation is proven using correct and appropriate techniques, procedures and test equipment.</p> <p>1.7. Conductor layout is noted, recorded and labelled to standard operating procedure.</p> <p>1.8. Conductors are disconnected using correct and appropriate techniques, procedures, tools and equipment.</p> <p>1.9. Disconnected cables/connections are terminated and made safe to standard operating procedures.</p> |
| <p>2. Connect equipment</p> | <p>2.1. Characteristics of the equipment to be connected are identified and connection requirements are determined.</p> <p>2.2. Circuit is checked for safe isolation using correct and appropriate techniques, procedures and test equipment.</p> <p>2.3. Connections are checked and conductors are prepared for termination using correct and appropriate tools and procedures.</p> <p>2.4. Conductors are connected to equipment to specifications using correct and appropriate techniques, tools and equipment.</p> <p>2.5. All cables/wires/conduit are fastened/sealed to specifications using correct and appropriate techniques, tools and equipment.</p> <p>2.6. All lock-off equipment and signage are removed using standard operating procedures.</p> <p>2.7. Equipment and circuit are checked and tested for compliance with specifications using correct and appropriate techniques, procedures, tools and</p> |

| ELEMENT | PERFORMANCE CRITERIA |
|----------------|-----------------------------|
| | equipment. |

| ELEMENT | PERFORMANCE CRITERIA |
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| 3. Perform emergency first aid | 3.1. Situation is assessed to identify points of danger to the injured person and potential rescuer. 3.2. Rescue/recovery of injured person or assistance to injured person is undertaken in accordance with recognised standards/procedures. Contact is made with the appropriate medical and rescue authorities. 3.3. Details of first aid given are recorded. |

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- determining and recording equipment characteristics and isolation points from relevant circuit diagrams, specifications, schematics of fixed wired equipment
- isolating fixed wired equipment
- using lock-off equipment and tags/signs
- proving electrical isolation
- labelling conductors and recording their layout
- disconnecting conductors
- making safe disconnected cables/connections
- checking circuits for safe isolation prior to reconnecting
- checking connections and preparing conductors for termination
- 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
- connecting conductors to equipment
- fastening/sealing cables/wires/conduits to specifications
- removing lock-off equipment and signage
- checking and testing equipment and circuits for conformance to specifications
- applying procedures for movement/treatment of injured, including:
 - safe rescue of victim from a live situation
 - clearing of airways

REQUIRED SKILLS AND KNOWLEDGE

- CPR (cardio-pulmonary resuscitation)
- care of spinal injuries
- treatment of cuts/lesions etc.
- treatment of burns/scalds
- treatment of shock
- using language and literacy skills to meet recording and reporting requirements related to this unit

Required knowledge

Look for evidence that confirms knowledge of:

- basic knowledge of electrical theory for the operation of the circuit/equipment
- hazards associated with the circuits and the equipment
- relevant regulatory requirements
- procedures for determining equipment characteristics
- procedures for recording equipment characteristics
- tools, techniques and equipment required to determine equipment characteristics
- point(s) of isolation for the fixed wired equipment
- reasons for selecting the chosen isolation point(s)
- safe isolation and proving dead
- the range of isolation procedures for the fixed wired equipment
- lock-off equipment and signs to be used
- reasons for using and procedures for lock-off equipment and signage
- tools, techniques and equipment to be used to prove electrical isolation
- procedures for proving and removing electrical isolation
- procedures for labelling conductors and recording conductor layout
- tools, techniques and equipment to be used to disconnect conductors
- procedures for disconnecting conductors
- procedures for terminating disconnected cables/connections
- characteristics of the circuit and the equipment
- tools, techniques and equipment to be used to terminate conductors and check connections
- procedures for terminating conductors and checking connections
- specifications for the connections to be made
- tools, techniques and equipment to be used to connect the conductors to the equipment
- procedures for connecting conductors to equipment
- tools, techniques and equipment to be used to fasten and seal the cables, wires and conduits
- procedures for fastening and sealing cables, wires and conduits
- operational specifications of the fixed wired equipment

REQUIRED SKILLS AND KNOWLEDGE

- tools, techniques and equipment to be used to check and test the compliance of the equipment with specifications
- procedures for checking the operation of the equipment and circuits
- potential dangers
- recognised procedures for the movement and treatment of the injured person
- appropriate local medical and rescue services
- procedures for recording first aid

Evidence Guide

| EVIDENCE GUIDE | |
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| <p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p> | |
| <p>Overview of assessment</p> | <p>A person who demonstrates competency in this unit must be able to disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c. Competency in this unit cannot be claimed until all prerequisites have been satisfied.</p> |
| <p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p> | <p>Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.</p> |
| <p>Context of and specific resources for assessment</p> | <p>This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with disconnecting/reconnecting fixed wired equipment up to 1000 volts a.c./1500 volts d.c., or other units requiring the exercise of the skills and knowledge covered by this unit.</p> |
| <p>Method of assessment</p> | <p>Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes,</p> |

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| EVIDENCE GUIDE | |
| | standards, manuals and reference materials. |

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| EVIDENCE GUIDE | |
| Guidance information for assessment | |

Range Statement

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| RANGE STATEMENT | |
| <p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p> | |
| Equipment | As defined in the licensing requirements |
| Isolation refers to | Safe disconnection of all electrical power to equipment or equipment supply circuits via switching, circuit breakers or fuses etc. On circuits/equipment using up to 1000 volts a.c. or 1500 volts d.c. single or multi-phase supply |
| Test equipment | Voltmeters, multimeters, tong testers and a range of hand tools such as pliers, screwdrivers, sockets and spanners |
| Connect equipment | Refers to reconnection of existing equipment or the replacement on a 'like for like' basis with no alteration to existing fixed wiring |

Unit Sector(s)

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| Unit sector | |
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Co-requisite units

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| Co-requisite units | |
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| Co-requisite units | | |
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Competency field

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| Competency field | Maintenance&diagnostics |
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