



Australian Government

Department of Education, Employment and Workplace Relations

MEM18050C Disconnect/reconnect fixed wired equipment over 1000 volts a.c./1500 volts d.c.

Release: 2

MEM18050C Disconnect/reconnect fixed wired equipment over 1000 volts a.c./1500 volts d.c.

Modification History

Single band identifier removed to clarify dual status

Unit Descriptor

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

Application of the unit	This unit applies to work performed on site and undertaken using predetermined standards of quality, safe work procedures and regulatory and legislative requirements. Persons undertaking this work would be appropriately recognised and endorsed by relevant statutory authorities where required. If power tools are used, Unit MEM18002B (Use power tools/hand held operations) must also be selected. 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
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM10002B	Terminate and connect electrical wiring
	MEM12002B	Perform electrical/electronic measurement
	MEM18001C	Use hand tools

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

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

ELEMENT	PERFORMANCE CRITERIA
	compliance to specifications using correct and appropriate techniques, procedures, tools and equipment.

ELEMENT	PERFORMANCE CRITERIA
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 and contact is made with 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 from relevant circuit diagrams, specifications, schematics
- correctly identifying the point(s) of isolation of fixed wired equipment
- proving electrical isolation
- isolating fixed wired equipment
- applying earths and lock-off equipment and signs
- labelling conductors and recording their layout
- disconnecting conductors
- terminating disconnected cables/connections
- checking circuits for safe isolation
- 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 earths and lock-off equipment and signage
- checking and testing equipment and circuits for conformance to specifications
- applying procedures for movement/treatment of injured, including:
 - HV (high voltage) rescue

REQUIRED SKILLS AND KNOWLEDGE

- clearing of airways
- CPR (cardio-pulmonary resuscitation)
- care of spinal injuries
- treatment of cuts/lesions etc.
- treatment of burns/scalds
- treatment of shock
- identifying possible risks associated with this work
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures
- following oral instructions

Required knowledge

Look for evidence that confirms knowledge of:

- any applicable industry standards, national/Australian standards, NOHSC guides, State/Territory regulatory codes of practice/standards
- use and application of personal protective equipment for disconnecting/reconnecting fixed wired equipment over 1000 volts a.c.1500 volts d.c.
- safe work practices and procedures
- characteristics of the circuit and the equipment
- hazards associated with the circuits and the equipment
- relevant regulatory requirements
- point(s) of isolation for the fixed wired equipment and reasons for selecting the particular isolation point(s)
- reasons for using earthing, lock-off equipment and signs
- clearances from live parts
- safe isolation
- specifications for the connections to be made
- operational specifications of the fixed wired equipment
- potential dangers of the work covered in this unit
- recognised procedures for the movement and treatment of the injured person
- appropriate local medical and rescue services
- procedures for incident reporting
- procedures, techniques, tools and equipment to be used for:
 - determining and recording equipment characteristics
 - isolating the fixed wired equipment
 - proving electrical isolation
 - labelling conductors and recording conductor layout
 - disconnecting conductors
 - terminating disconnected cables/connections

REQUIRED SKILLS AND KNOWLEDGE
• checking circuits for safe isolation • terminating conductors and checking connections • connecting the conductors to the equipment • fastening and seal the cables, wires and conduits • removing lock-off equipment and signage • checking the operation of the equipment and circuits • checking and testing the compliance of the equipment with specifications

Evidence Guide

EVIDENCE GUIDE

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.

Overview of assessment

A person who demonstrates competency in this unit must be able to disconnect/reconnect fixed wired equipment over 1000 volts a.c./1500 volts d.c. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

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.

Context of and specific resources for assessment

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.

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 over 1000 volts a.c./1500 volts d.c., or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

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,

EVIDENCE GUIDE	
	standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
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.	
Appropriate techniques and procedures	Includes clearances for safe approach as mandated by statutory authorities
Isolation	Isolating supply for safe disconnection of all electrical power to equipment supply circuit with switch circuit breaker or fuses etc.
Connection	Disconnection/reconnection and making safe for maintenance of equipment
Circuit	Applies to voltage levels above 1000 volts a.c. and 1500 volts d.c.
Tools and equipment	In accordance with voltage and fault limiting requirements appropriate proving dead meters, high potential testers, voltmeters and a range of hand held tools such as pliers, screwdrivers, sockets, spanners, keys, earthing links, operating sticks etc.
Signage	Tags, access permit holders, restricted access signs

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Maintenance and diagnostics
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