



Australian Government

MEM10002 Terminate and connect electrical wiring

Release: 1

MEM10002 Terminate and connect electrical wiring

Modification History

Release 1. Supersedes and is equivalent to MEM10002B Terminate and connect electrical wiring

Application

This unit of competency defines the skills and knowledge required to terminate, disconnect or reconnect electrical wiring, including all types of cords and cables and circuits, excluding specialist cables.

All testing is undertaken on completed circuits where these are not connected to main supply, using appropriate methods including continuity and resistance checks.

Where soldering/desoldering of electrical/electronic components is required see unit MEM05001 Perform manual soldering/desoldering - electrical/electronic components and unit MEM05002 Perform high reliability soldering and desoldering, as appropriate.

Where termination and connection of specialist cables such as mineral insulated, steel wire and armoured cables is required see unit MEM10011 Terminate and connect specialist cables.

This unit does not cover the competencies required for energising and testing of the circuit.

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

Band: A

Unit Weight: 3

Pre-requisite Unit

MEM09002	Interpret technical drawing
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

Installation and commissioning

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 | Prepare for electrical wiring termination and connection | 2.1 | Undertake all work safely and to workplace procedures and state/territory regulations and legislative requirements |
| | | 2.2 | Check materials for correct specifications |
| | | 2.3 | Undertake preparation of work or check/inspect for correct location and specifications of cable trays, brackets and trenches |
| | | | |
| 3 | Connect electrical wiring | 3.1 | Ensure terminations/connections are made to specifications, manufacturers' requirements and to safety and state/territory regulations and legislative requirements |
| | | 3.2 | Adjust and fix all brackets, clamps and holders to specifications |
| | | 3.3 | Ensure all cables, wires, conductors and connections are marked/tagged and labelled to specification |
| | | 3.4 | Test terminated cables to ensure continuity and insulation resistance readings comply with requirements |
| | | 3.5 | Complete all reports and documentation correctly to required specifications |

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.

Electrical wiring includes one (1) or more of the following:

- wiring associated with:
 - control wiring
 - machinery
 - other electrical apparatus

Terminations/connections include one (1) or more of the following:

- clamping
- crimping
- pin connection
- soldered joints
- plugs
- sockets
- clamping of cables and wires and sealing entry points where required

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM10002B Terminate and connect electrical wiring

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 MEM10002 Terminate and connect electrical wiring

Modification History

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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, drawings, regulatory and legislative requirements for terminating and connecting electrical wiring
- connecting and terminating electrical wiring utilising a range of methods and sealing entry points, where required, and marking/tagging and labelling wiring to specifications
- using test equipment to locate various faults
- inspecting and testing terminated cables to ensure they comply with continuity and insulation resistance and are safely intended for use
- completing all reports and documentation in accordance with SOPs.

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)
- statutory and regulatory requirements associated with the termination and connection of electrical wiring including AS/NZS 3000:2000, Electrical Installations (known as the Australian/New Zealand Wiring Rules), other Australian/International Standards and codes of practice
- different types of electrical cables and cords and their applications
- structural components of cables and their purpose (conductor material, stranding, insulation type, voltage rating, screening, sheathing, armour and serving)
- identifying the Australian and international colour standards for cables and cords
- factors affecting cable current-carrying capacity including current requirements for the circuit, cable installation method to be used and environmental conditions in the vicinity of cable installation
- wiring support and/or protection requirements and specifications
- relevant manufacturer requirements
- specifications and methods for terminating different materials
- wiring support techniques and alternatives

- marking, tagging and labelling requirements for cables, wires, conductors and connections
- test requirements to ensure compliant continuity and insulation resistance
- data to be recorded/reported and the frequency of recording/reporting
- requirements for approval to work.

Assessment Conditions

- Assessors must:
 - have vocational competency in terminating and connecting electrical wiring 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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