



Australian Government

Assessment Requirements for MEM10016 Terminate and test electrical wiring and accessories

Release: 3

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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
- identifying and interpreting circuits, drawings, plans and specifications relevant to the work to be undertaken
- identifying the cables and cords by conductor size, type and rating
- preparing and terminating cable and cords to accessories using appropriate hardware, tools and equipment, including soldering without undue damage to insulation or conductor
- preparing and terminating at least five (5) or more of the following cable and cord types at a device terminal enclosure:
 - thermoplastic insulated cable (TPI)
 - flat thermoplastic sheathed (TPS)
 - circular thermoplastic sheathed (TPS)
 - steel wired armoured (SWA)
 - fire rated cable (high tension (HT) or high frequency (HF) or mineral insulated metal sheath (MIMS))
 - cross-linked polyethylene (XLPE) cables
 - neutral screened cables
 - flexible cords and cables
 - aluminium conductor/cable
- terminating the above selected cable and cord types into two (2) or more of the following connectors and lugs:
 - connectors:
 - screw
 - stud
 - tunnel
 - lugs:

- crimp and compression
- soldering
- solderless
- maintaining/achieving required fire rating
- inspecting and testing terminated cables to ensure they comply with continuity and insulation resistance requirements and are safely intended for use
- using test equipment to locate faults, completing remedial action and retesting to ensure compliance
- documenting termination and testing of electrical cables, cords and accessories 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)
- 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)
- Australian and International colour standards for cables and cords
- factors affecting cable current-carrying capacity:
 - current requirements for the circuit
 - cable installation method to be used
 - environmental conditions in the vicinity of cable installation
- Australian/New Zealand Wiring Rules requirements for flexible cords, cables and plugs
- Australian Standards and manufacture requirements for the termination of:
 - TPS and TPI cables
 - fire protection and MIMS cables
 - SWA
 - trailing cable and catenary wire systems
- soft soldering process, including the use of liquid petroleum (LP) gases and precautions to be observed
- fire rated cable types, including HT, HF and MIMS and their applications
- types of accessories and their intended use
- support, fixing and protection methods, including:
 - selection and safe application of devices for fixing to timber, metal, hollow structures, masonry and concrete
 - hazards and safety measures when working with adhesives and chemical fixing devices
- safe work methods for:
 - using hand and power tools
 - using powder and compressed gas operated tools

- test requirements to ensure compliant continuity and insulation resistance and documentation to be completed.

Assessment Conditions

- Assessors must:
 - have vocational competency in terminating and testing electrical wiring and accessories 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>