



Australian Government

MEM18106 Terminate communication and data cables

Release: 2

MEM18106 Terminate communication and data cables

Modification History

Release 2. Prerequisite units updated

Release 1. New unit

Application

This unit has been developed for Engineering Tradesperson – industrial electrician apprenticeship training and the recognition of trade-level skills in terminating all types of communication and data cables in accordance with the relevant legislative requirements and statutory regulations.

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

Band: A

Unit Weight: 4

Pre-requisite Unit

Path 1	MEM05001	Perform manual soldering/desoldering – electrical/electronic components
	MEM12023	Perform engineering measurements
	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.
1. Determine job requirements	1.1 Follow standard operating procedures (SOPs)
	1.2 Comply with work health and safety (WHS) requirements at all times, including appropriate risk control measures

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	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. Identify and mark conductors/cables	2.1 Identify cables and conductors using appropriate test equipment and techniques 2.2 Label cables and conductors in accordance with procedures, legislative requirements and statutory regulations to specifications
3. Prepare and terminate cable	3.1 Obtain termination requirements and specifications 3.2 Maintain the minimum bend radius of the cable in accordance with specifications when cutting cable to required length 3.3 Prepare cable ends to specifications, legislative requirements and statutory regulations utilising appropriate tools and techniques 3.4 Terminate cables according to specifications using appropriate tools and techniques 3.5 Test/examine terminations for compliance with specifications
4. Fix/secure cables	4.1 Fix/secure cables utilising appropriate fixing/securing techniques 4.2 Use the proper cable management hardware to support the in-place cables and relieve tension

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.

Legislative requirements and statutory regulations include one or more of the following:

- ACA Technical Standards AS/ACIF008, AS/ACIF009
- SAA Communications Cabling Manual (Open)
- AS/NZS 3000:2007 Electrical installations (known as the Australian/New Zealand Wiring Rules)
- Telecommunications Act 1997

Types of cables include one or more of the following:

- thermocouple/compensator cables, including mineral-insulated metal sheath (MIMS)
- transmission cables
- thermoplastic/elastomer insulated/sheathed
- compensating cables
- coaxial
- telephone
- category 5
- optical fibre
- extra-low voltage (ELV) control cables

Minimum bend radius includes:

Bend radius according to manufacturer specifications, including:

- 4 times the cable diameter for unshielded twisted pair (UTP) and screened twisted pair (ScTP) cables
- 10 times the cable diameter for optical fibre cable

Tools include one or more of the following:

- krone tool
- cable strippers
- crimping tools, e.g. RJ45 crimping tool
- slitter tool
- pliers

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.

- Terminations include one or more of the following:**
- crimp
 - wire wrap (non-insulated and pre-insulated)
 - solder
 - connectors
 - multi-terminal plugs and sockets
 - fibre optics
 - coaxial
 - terminal blocks
 - punch-down connections

Unit Mapping Information

No equivalent unit

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 MEM18106 Terminate communication and data cables

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, SOPs and safe work practices
- identifying and interpreting specifications, data sheets, legislative requirements and statutory regulations and obtaining relevant data with respect to terminating signal and data cables
- identifying cables and conductors and label in accordance with requirements, procedures and regulations
- maintaining the minimum bend radius of the cable according to manufacturer specifications
- preparing and terminating cables using appropriate tools and techniques to specifications
- testing terminations for compliance with specifications
- using the proper cable management hardware to support the in-place cables and relieve tension
- fixing/securing cables in accordance with procedures.

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 PPE
- legislative requirements and statutory regulations, including ACA Technical Standards AS/ACIF008, AS/ACIF009, SAA Communications Cabling Manual (Open), AS/NZS 3000:2007 Electrical installations (known as the Australian/New Zealand Wiring Rules) and Telecommunications Act 1997
- test equipment, techniques and procedures to be used to identify cables and conductors
- labelling requirements and procedures for labelling cables and conductors
- minimum bend radius for communication and data cables
- termination requirements, specifications and procedures, tools and techniques for preparing and terminating cables
- procedures for testing cables and terminations

- factors that influence selection of fixing/securing techniques, including cable management hardware.

Assessment Conditions

Assessors must:

- have vocational competency in terminating communication and data cables 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 that 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 manufacturer 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

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