



Australian Government

MEM15010 Perform laboratory procedures

Release: 1

MEM15010 Perform laboratory procedures

Modification History

Release 1. Supersedes and is equivalent to MEM15010B Perform laboratory procedures

Application

This unit of competency defines the skills and knowledge required to work under laboratory conditions, perform calibration of equipment and write reports on the results. It applies to the use of a range of sophisticated equipment that provides independent feedback on quality processes and procedures.

Calibration refers to those calibrations which are conducted to a specified standard using equipment available in the workplace/laboratory. It can include the testing of known standard samples.

This unit would be taken in conjunction with appropriate technical units.

Where interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measurement is required unit MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of tools is required unit MEM18001 Use hand tools and unit MEM18002 Use power tools/hand held operations, should also be selected as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: B

Unit Weight: 8

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Quality

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 | Identify job requirements from specifications, drawings, circuits, job sheets or work instructions |
| | | | |
| 2 | Work under laboratory conditions and perform calibration | 2.1 | Conduct independent tests under controlled conditions |
| | | 2.2 | Verify and calibrate equipment to agreed quality standards |
| | | 2.3 | Safeguard calibration status against unauthorised adjustment |
| | | 2.4 | Keep accurate records for reference purposes |
| | | 2.5 | Recall test equipment periodically for adjustment, repair and re-calibration |
| | | 2.6 | Maintain documentary evidence to satisfy the requirements of the certifying body or as specified by the calibration standards or the manufacturer's recommendations |
| | | 2.7 | Trace calibration of known accuracy to national or international reference standards or, where these do not exist, set calibration to specifically developed criteria |

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.

Tests will be conducted to a standard and include one (1) or more of the following:

- mechanical tests including for hardness, tensile and impact
- electrical tests including for resistance, capacitance and inductance
- semiconductor or other electronic tests

Test equipment includes one (1) or more of the following:

- mechanical
- electrical
- electronic
- some combination

Documentary evidence includes one (1) or more of the following:

- identification of equipment
- frequency of re-calibration
- calibration status
- procedures for:
 - recall
 - handling and storage
 - adjustment
 - repair
 - calibration
 - installation and use

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM15010B Perform laboratory procedures

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 MEM15010 Perform laboratory procedures

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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 relevant drawings, circuits, specifications, instructions and data
- conducting independent tests to a standard method under controlled conditions
- checking measuring equipment for correct calibration against agreed quality standards
- safeguarding the calibration status of the equipment against unauthorised adjustment
- recalling test equipment for adjustment, repair and re-calibration and using reference standards or specific criteria as a basis for calibration
- completing and maintaining records of measuring equipment calibrated and preparing reports on the tests carried out.

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
- tests and conditions under which they are to be undertaken
- testing procedures to be followed and the reasons for conducting tests under controlled conditions and the need for tests to be conducted independently
- quality standards against which the measuring equipment is to be calibrated
- specifications and correct operation of the measuring equipment
- tools and equipment required to check the calibration of the measuring equipment
- procedures for checking the calibration of the measuring equipment
- any codes, standards, legislative or regulatory requirements applicable to the measuring equipment and/or calibration
- procedures for preventing unauthorised adjustment of equipment and the reasons for protecting equipment against unauthorised adjustment
- records to be kept with respect to the calibration of measuring equipment and the reasons for keeping accurate calibration records

- procedures for recalling test equipment for adjustment, repair and re-calibration and the frequency of test equipment recall and reasons why test equipment can be recalled
- all relevant documentation relating to the calibration/re-calibration of test equipment and procedures for completion
- sources of reference standards and procedures to be used in the absence of reference standards
- reports to be prepared/provided with respect to the test equipment being tested and the procedures for preparing/ providing reports on tests carried out on test equipment
- auditing processes to be applied to testing procedures
- use of information from the inspections, tests and audits conducted in the development of design and servicing of products/equipment.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing laboratory procedures 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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