



Australian Government

MEM12023 Perform engineering measurements

Release: 1

MEM12023 Perform engineering measurements

Modification History

Release 1. Supersedes and is equivalent to MEM12023A Perform engineering measurements

Application

This unit of competency defines the skills and knowledge required to perform measurements requiring straightforward use of mechanical measuring devices which incorporate visual inspections representing units of measurement and associated calculations in a range of manufacturing, engineering and related environments. Measurements may be expressed in metric or imperial units.

Electrical/electronic devices used are those not requiring the connection or disconnection of circuitry.

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

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

Band: A

Unit Weight: 5

Pre-requisite Unit

MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Measurement

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

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

		1.3	Identify job requirements from specifications, sketches, job sheets or work instructions
2	Select appropriate device or equipment	2.1	Determine measurement requirements from specifications
		2.2	Select appropriate device or equipment to achieve required outcome according to SOPs
3	Obtain measurements using a range of measuring devices	3.1	Use correct and appropriate measuring technique
		3.2	Obtain measurements accurately in a safe and effective manner
		3.3	Determine or verify dimensions using calculations, as required
4	Maintain measuring devices	4.1	Undertake routine care and storage of devices to manufacturers' specifications or SOPs
		4.2	Make routine adjustments to devices to maintain device accuracy
5	Communicate measurements as required	5.1	Record measurements accurately, as required
		5.2	Prepare freehand sketch which depicts required information, as required

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.

Specifications include one (1) or more of the following:

- drawings
- sketches
- job instructions
- schematics
- diagrams
- reference manuals

Measuring devices include one (1) or more of the following:

- protractors
- combination squares
- set squares
- dial indicators
- thermometers
- tapes
- rules
- micrometres
- vernier-scaled measuring equipment

Calculations include one (1) or more of the following:

- addition
- subtraction
- multiplication
- division
- fractions
- decimals

Note: Calculations may be made using a calculator

Routine adjustments include the following:

- validating the device using simple zeroing or scale adjustment

Measurements include one (1) or more of the following:

- length
- squareness
- flatness
- angle
- roundness
- clearances
- any other measurements that can be read off analogue, digital

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or other measuring device

Information includes one (1) or more of the following:

- dimensions
- instructions
- base line
- datum points

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM12023A Perform engineering measurements

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 MEM12023 Perform engineering measurements

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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 measurement requirements from specifications
- selecting appropriate measuring device or equipment to achieve the required outcome
- obtaining measurements in a safe and effective manner and recording measurements, including preparing a freehand sketch which depicts required information, as required
- performing calculations to determine or verify dimensions
- storing and maintaining measuring devices including routine adjustments according to manufacturer's specifications or 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
- correct application of a range of measuring devices
- correct and appropriate measuring technique for a range of measuring devices
- calculations, including addition, subtraction, multiplication, division, fractions and decimals
- manufacturer's or SOPs for handling and storing a range of measuring devices
- appropriate procedures for adjusting and zeroing a range of measuring devices, including scale adjustment
- appropriate methods of communicating measurements by drawings.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing engineering measurements 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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