



**Australian Government**

# **MEM09229 Read and interpret technical engineering drawings**

**Release: 1**

# MEM09229 Read and interpret technical engineering drawings

## Modification History

Release 1. New unit.

## Application

This unit of competency defines the skills and knowledge required to read and interpret technical engineering drawings.

Technical engineering drawings may use perspective, exploded views or hidden detail techniques and may include symbol glossaries. Drawings are provided as described in AS 1100.101 Technical drawing – General principles, or other relevant Australian and international standards from the full range of technical engineering disciplines.

Where any technical engineering drawing, sketch, chart or diagram is only used as a technique for communication, then this unit does not apply and unit MEM12023 Perform engineering measurements or unit MEM16006 Organise and communicate information should be selected as appropriate.

This unit should not be selected when MEM09002 Interpret technical drawing has been selected.

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

## Pre-requisite Unit

Nil

## Competency Field

Drawing, drafting and design

## Elements and Performance Criteria

| Elements                                         | Performance Criteria                                                                                                                                                           |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i> | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                         |
| 1. Determine job requirements                    | 1.1 Follow standard operating procedures (SOPs)<br>1.2 Comply with work health and safety (WHS) requirements at all times<br>1.3 Identify job requirements from specifications |
| 2. Read and interpret                            | 2.1 Ensure drawing and version conform to job requirements                                                                                                                     |

| Elements                                         | Performance Criteria                                                                                                                                                                                                         |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i> | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                       |
| information on drawing                           | 2.2 Identify components and assemblies or objects<br>2.3 Interpret dimensions, instructions and material requirements<br>2.4 Identify symbols used in the drawing<br>2.5 Prepare a list of required materials and components |

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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.

|                             |                                                                                                                                                                                                         |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drawing components include: | <ul style="list-style-type: none"> <li>• relationship between the views contained in the drawing</li> <li>• object</li> <li>• units of measurement</li> <li>• dimensions</li> <li>• symbols.</li> </ul> |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Unit Mapping Information

Release 1. New 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 MEM09229 Read and interpret technical engineering drawings

## Modification History

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 and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- selecting, checking and validating technical engineering drawings against job requirements or equipment
- reading and interpreting technical engineering drawings through recognition of components, assemblies, objects and symbols on at least two occasions
- identifying units of measurement and dimensions on at least two occasions
- interpreting drawing conventions appropriate to technical engineering disciplines on at least two occasions
- preparing materials and components lists.

*Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.*

## 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
- application of AS 1100.101 Technical drawing – General principles, other relevant Australian and international standards, or their equivalents from other technical engineering disciplines as relevant to the workplace
- conventions used in technical engineering drawings
- relationship between views in technical drawings
- instructions contained in technical engineering drawings
- materials from which drawing objects are made, their features and manufacturing and assembly requirements.

## Assessment Conditions

- Assessors must:
  - have vocational competency in reading and interpreting technical engineering drawings 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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