



Australian Government

**Assessment Requirements for MEM09210
Create 3D solid models using
computer-aided design (CAD) system**

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM09210A Create 3-D solid models using computer-aided design (CAD) system.

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
- determining purpose and scope for solid modelling task through consultation with appropriate personnel utilising all available information including industry codes and standards relevant to the requirements
- selecting and setting up 3D computer-aided design (CAD) software package including key features of solid modelling to create solid models that meet design specifications
- creating 3D models using CAD systems, incorporating section views and all necessary notation on at least two occasions
- confirming model accurately reflects specifications
- saving and filing drawing elements in accordance with SOPs.

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
- number of views required to establish the model
- procedures for:
 - creating and manipulating entities in 3D space
 - modifying existing 3D models
 - saving drawing files
 - extracting data with respect to the physical properties of models created in 3D space
- entities that can be created and/or manipulated in 3D space
- applications of swept, extruded and revolved solids and procedures for creating them
- rendering types and preferences, render lighting techniques, views and scenes

- formats in which drawing files can be saved and reasons for using different formats when saving drawing files
- physical properties of shapes created in 3D space that can be extracted from the drawing file
- solid modelling techniques including editing solid primitives, and conversion from region to solid models
- terminology associated with solid modelling, and wire frame, as opposed to solids
- personnel to be consulted.

Assessment Conditions

- Assessors must:
 - have vocational competency in creating 3D solid models using a CAD system 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 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 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>