



Australian Government

Assessment Requirements for MEM09214

Perform advanced engineering detail drafting

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM09214A Perform advanced engineering detail drafting.

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 drawing requirements including software relevant to the project, utilising all available information and requesting further information from designer as required
- calculating required limits, fits, datum references and geometric tolerances where not supplied from designer or reference material to meet design requirements
- producing assembly and sectioned drawings, with all components identified, including specialised dimensioning and auxiliary views, to AS 1100.101 Technical drawing – General principles, or equivalent, on at least two occasions
- producing a bill of materials on at least two occasions including part quantities and material lengths
- confirming drawings accurately reflect specifications
- documenting and storing drawings in accordance with SOPs
- complying with standard operating procedures (SOPs) including quality requirements.

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
- specifications and requirements of the component, assembly or layout to be drawn
- types of assembly drawings
- functional operation of the component or assembly to be drawn
- surfaces which are to be in contact or separated
- appropriate type of fit for contacting surfaces and reasons for selection
- calculation methods for determining limits, fits, datum references and geometric tolerances

- effect of surface finish on the performance or operation of surfaces
- lineal, diametric and geometric tolerances and procedures for determining tolerances
- requirements of AS 1100.101 Technical drawing - General principles, or equivalent for drawings to be produced
- appropriate components and materials from supplier or manufacturer catalogues and reasons for selection
- procedures for checking and approving drawings and reasons for checking the drawings to ensure that manufacturing or assembly is possible, efficient and cost-effective
- drawing specifications
- methods of manufacture, assembly and/or fabrication from drawings
- unnecessary or inappropriate tolerances
- engineering features, terminology and abbreviations
- hatching techniques including large sections, small sections, thin sections and designation of materials
- sectioning systems including revolved section, removed section, local or part section, offset section, aligned section and interposed section
- types of bearings
- sectioning conventions including screw threads, shafts and rods, webs and thin sections
- awareness of copyright and intellectual property issues and legislation in relation to drawing
- role of datum points in dimensioning and tolerancing a detail engineering drawing
- RFI process for project or organisation
- symbols used for dimensioning and tolerancing.
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Assessment Conditions

- Assessors must:
 - have vocational competency to perform advanced engineering detail drafting 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>