



Australian Government

Assessment Requirements for MEM23134 Evaluate jigs and fixtures

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM23134A Evaluate jigs and fixtures.

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:

- determining parameters and context of jigs, fixtures, templates and gauges in manufacturing processes
- reviewing design and construction features, functions, applications and limitations of jigs, fixtures, templates and gauges on at least two occasions
- investigating sustainability implications of jigs, fixtures, templates and gauges
- identifying principles, design, analysis techniques and requirements of manufacturing software, including supervisory control and data acquisition (SCADA) required to evaluate and optimise jigs, fixtures, templates and gauges and related manufacturing processes
- evaluating WHS, regulatory and risk management compliance
- reporting and documenting results of evaluation.

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:

- work health and safety (WHS) and regulatory compliance requirements, and risk management practices relevant to jigs, fixtures, templates and gauges and related manufacturing and maintenance processes
- purpose of jigs and fixtures
- typical jigs, fixtures, templates and gauge applications, including effects on:
 - repeatability of processes
 - accuracy and other quality requirements
 - labour and skill requirements for operations
- features and functions, of jigs, fixtures, templates and gauges
- integration with or facilitation of jigs, fixtures, templates and gauges with lean manufacturing techniques including:
 - standardisation
 - reduction of waste (also often called muda)

- task time
- just in time (JIT)
- typical construction methods for jigs, fixtures, templates and gauges
- graphical representations and developments of jigs, fixtures, templates and gauges, including assemblies, component parts, operational overlays and user instructions
- dimensioning systems, including tolerances, limits and fits, and effect on manufacturing method
- appropriate technical and professional assistance
- materials and their applications in jigs, fixtures, templates and gauges
- positioning, locating and clamping methods
- design and simulation techniques, including use of computer-aided design (CAD) software for design and animations
- jig, fixture, template and gauge manufacturing techniques including:
 - fabrication and joining processes
 - machining including milling, turning and grinding
 - post-processing of CAD files
 - computer numeric control (CNC) machining
 - electro-discharge machining (EDM)
 - additive and rapid processes
 - heat treatment
 - surface treatments
 - finish grinding and polishing
- SCADA and other manufacturing control software and implications for jigs, fixtures, templates and gauges
- systems thinking, continuous improvement, constraint and contingency management, and comparative supply chain performance
- sustainability implications of jigs, fixtures, templates and gauges.
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Assessment Conditions

- Assessors must:
 - have vocational competency in evaluating jigs and fixtures 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.
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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>