



Australian Government

Assessment Requirements for MEM04041 Develop and manufacture production patterns

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM04014 Develop and manufacture production patterns (Release 2).

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
- designing and planning pattern by interpreting customer specifications (verbal or written) for number, layout, runner system and core box design
- developing a plan for sequence of manufacture for a low or high volume on at least two occasions
- developing pattern equipment by selecting and obtaining appropriate materials on at least two occasions
- undertaking mathematical calculations
- selecting and using appropriate machines, machining process and hand and power tools to shape, produce, fashion and manufacture production patterns and core boxes to specifications on at least two occasions
- checking production patterns and core boxes against specifications and 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 and use of personal protective equipment (PPE)
- characteristics of metals and alloys and their application in the development and manufacture of production patterns
- tolerances and contraction rates typically used in the manufacture of production patterns
- production moulding and casting techniques
- tooling required for casting and moulding
- methoding techniques
- use and application of jigs and fixtures
- methods of construction including machining provision and clamping arrangements
- techniques, tools and equipment to measure, mark out and produce production patterns

- formulae and mathematical techniques required for manufacturing production patterns and core boxes, including contraction, taper, clearances and machining allowances
- identification coding and numbering
- pattern checking techniques
- mouldability including surface finish, face taper, convex or concave perspectives and undercuts.
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Assessment Conditions

- Assessors must:
 - have vocational competency in the development and manufacture of production patterns 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>