Australian Government

Assessment Requirements for MEM23135 Evaluate moulding tools and processes

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM23135A Evaluate moulding tools and processes.

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 moulding tools in manufacturing processes
- reviewing design and construction features, functions, applications and limitations of moulding tools on at least two occasions
- investigating sustainability implications of moulding tools and associated manufacturing processes
- identifying principles, design, analysis techniques and software including supervisory control and data acquisition (SCADA) required to evaluate and optimise moulding tools and related manufacturing processes
- evaluating work health and safety (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:

- design parameters, construction features, functions and context of moulding tools in manufacturing operations
- sources of technical and professional assistance
- WHS and regulatory compliance requirements, and risk management practices for moulding tools and related manufacturing and maintenance processes
- sustainability and lean systems implications for mould tooling and related manufacturing processes
- moulding processes that use tooling including:
  - injection moulding
  - blow moulding
  - extrusion moulding
  - compression moulding
  - rotational moulding

- thermoform (vacuum) moulding
- die casting
- low volume and manual moulding

- moulding tool design features, functions and manufacturing techniques
- computer-aided design (CAD) design software and techniques including software for:
  - analysis
  - mould flows
  - heat dissipation
- injection moulded components
- injection moulds process including:
  - design features, functions and limitations
  - properties of materials for injection moulded components
  - enhanced injection moulding tools and processes
- blow moulds including continuous and intermittent parison extrusion moulding, injection and stretch blow moulds:
  - enhanced blow moulding tools and techniques
  - properties of blow moulding materials
- extrusion moulds including:
  - design features, functions and limitations
  - properties of extruded materials
- compression moulds including compression injection moulds:
  - design features functions and limitations
  - properties of materials for compression moulding
- rotating moulds including:
  - design features functions and limitations
  - properties of materials for rotating moulded components, including acetal copolymer (POM)
- thermoforming (vacuum) moulds including:
  - design features, functions and limitations
  - properties of materials for thermoformed components including amorphous thermoplastics and semicrystalline materials, with clearly defined melting points
- low volume moulds including flexible, laid up and sprayed shell moulds
- die casting moulds:
  - design features functions and limitations
  - properties of materials for hot chamber die cast components
  - properties of materials for cold chamber die cast components
- analysis techniques, software and software validation techniques
- systems thinking, continuous improvement, problem-solving and decision-making, and constraint and contingency management principles and techniques
- reporting and documentation requirements.
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Assessment Conditions

- Assessors must:
  - have vocational competency in evaluating moulding tools and processes 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 available on VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2