



Australian Government

Assessment Requirements for MEM23063 Select and organise mechanical engineering material tests

Release: 1

Assessment Requirements for MEM23063 Select and organise mechanical engineering material tests

Modification History

Release 1. Supersedes and is equivalent to MEM23063A Select and test mechanical engineering materials

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:

- reviewing design information for materials and materials test requirements
- selecting classes of materials for applications, for further research, testing and evaluation, based on comparison of properties relevant to design
- identifying standards, codes and regulatory requirements relevant to materials testing and application
- identifying test methods for properties of, and faults and flaws in, materials and components on at least two occasions
- specifying and organising appropriate tests and test methods and interpreting test results for material selection on at least two occasions
- selecting materials consistent with test results, design and regulatory requirements
- applying environmental and sustainability requirements to materials selection
- ensuring traceability in material selection process
- documenting all results and tests in accordance with procedures.

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:

- properties of materials classes
- effect of material properties, faults or flaws on mechanical and manufacturing engineering methods and processes
- test methods and procedures for materials and components, including specific industrial test standards, regulations and authorities related to mechanical engineering applications
- test methods for faults or flaws in materials and components or product
- sources and uses of information on materials and materials tests, including test certificates, regulations, standards, regulatory bodies and industrial authorities
- methods of accessing safety data sheets (SDS)
- significance of test sheets and certificates to applications
- significance of SDS and relevance of procedures

- materials selections in relation to design functional requirements
- environmental impact and sustainability assessment
- significance of test procedures, reports and documentation to applications, including the need for obtaining and filing test sheets and certificates
- significance of test calibration and traceability
- safe work practices and procedures and use and application of personal protective equipment (PPE)
- hazards and control measures associated with selecting and testing mechanical engineering materials including housekeeping.
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Assessment Conditions

- Assessors must:
 - have vocational competency in selecting and organising tests of mechanical engineering materials 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>