



Australian Government

Assessment Requirements for MEA707 Select and test aeronautical engineering materials

Release: 1

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Modification History

Release 1 - New unit of competency

Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- selecting class of materials for an application based on comparison of properties for a significant range of materials classes
- selecting class of materials for an application suitable to production and construction methods and processes
- identifying, overcoming or compensating for common characteristics, faults or flaws in materials or product
- identifying test methods for materials and components, specific industrial test standards and regulations for particular engineering applications
- identifying test methods for faults or flaws in materials and components or product
- selecting materials following an extensive search of appropriate sources of information, including manufacturer's catalogues and websites
- selecting appropriate tests from a range of possible tests, following an extensive search of appropriate sources of information, including manufacturer's catalogues and websites
- satisfying applicable standards and regulations for materials and components
- sourcing materials test certificates and using the material properties information from them
- sourcing, obtaining and implementing MSDS
- implementing tests correctly for materials and component faults and properties of materials
- selecting test methods appropriate to applications
- obtaining appropriate test sheets/certificates for applications
- completing reports, records and design documentation
- addressing environmental impact and sustainability issues
- reporting, recording and filing test reports and documentation
- implementing materials tests and test sheets/certificates, test calibration and traceability.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- properties of materials classes

- the effect of material properties on production and construction methods and processes
- the effect of characteristics, faults or flaws in materials on product and processes
- test methods for materials and components, specific industrial test standards, regulations and authorities related to particular engineering applications
- test methods for faults or flaws in materials and components or product
- methods of accessing and using alternative information sources
- test procedures and typical applications for tests
- sources and uses of information on materials, materials tests, test certificates, regulations, standards, regulatory bodies and industrial authorities
- methods of accessing MSDS and their relevance to procedures
- identification of materials for an application based on comparison of properties of materials
- identification of test for an application based on an understanding of its ability to measure specific material or product properties
- significance of test sheets/certificates to applications
- the need for obtaining and filing test sheets/certificates
- materials selections in relation to design functional requirements
- environmental impact and sustainability assessment
- significance of test reports and documentation to applications
- significance of reporting and recording procedures
- significance of materials tests and test sheets/certificates, test calibration and traceability
- significance of reporting and recording procedures.

Assessment Conditions

- This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then a simulated working environment must be used that reflects realistic workplace situations and conditions.
- The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team.
- Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
- Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application.
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process.
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessors must be satisfied that the candidate can competently and consistently:
 - identify classes of materials for specific aeronautical engineering situations and specify by material specification

- identify testing requirements for selected materials and applicable organisations for the conduct of tests
- identify and specify processes required to achieve required material properties
- obtain and apply relevant MSDS
- ensure that material manufacturing and test records meet regulatory requirements.
- Assessment may be in conjunction with assessment of other units of competency where required.
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>