



Australian Government

Assessment Requirements for MEM30005 Calculate force systems within simple beam structures

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM30005A Calculate force systems within simple beam structures.

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 the resultant and equilibrant of systems of coplanar forces on at least two occasions
- determining nominal sizes for simple horizontal beam subject to a combination of uniform and point loading
- calculating force systems within simple beam structures on at least two occasions.

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:

- force and gravity
- the concept of force
- characteristics of force
- rectangular components of force
- graphical addition of forces
- mathematical addition of forces
- weight as force
- moment and torque
- moment of force
- addition of moments
- equilibrium of moments
- torque
- equivalent force moment systems
- statics
- equilibrium of coplanar forces
- conditions of equilibrium
- calculation of beam reactions including simply supported, point load, uniformly distributed load (UDL) and self-weight

- simple beams
- shear force and bending moment diagrams
- bending stress
- deflection by formula
- stress and strain
- shear stress and strain
- allowable stress
- factors of safety.
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Assessment Conditions

- Assessors must:
 - have vocational competency in calculating force systems within simple beam structures 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>