



Australian Government

MEM06002 Perform hammer forging

Release: 1

MEM06002 Perform hammer forging

Modification History

Release 1. Supersedes and is equivalent to MEM06002B Perform hammer forging

Application

This unit of competency defines the skills and knowledge required to use hammer and power hammer tools and formers, apply hammer forging techniques and operate heating devices.

Equipment used does not include drop and upset machinery, vacuum furnaces or rolling and extruding mill machinery.

Where the interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measurement is required unit MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of tools is required unit MEM18001 Use hand tools and unit MEM18002 Use power tools/hand held operations, should also be selected as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Forging

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
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1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, sketches, job sheets or work instructions
2	Select material	2.1	Select material for use with specific tools and formers
		2.2	Make material calculations using volumes and weights that include provision for thermal expansion/contraction, oxidation and shrinkage
3	Use hammer tools and formers	3.1	Select and use hammer tools and formers for specific forging techniques
		3.2	Set up and operate forging machine
4	Apply hammer forging techniques	4.1	Select and apply appropriate hammer forging technique
		4.2	Recognised defects and take appropriate action for rectification
		4.3	Apply correct techniques to the handling of hot metal with regard to balancing and pivoting
		4.4	Apply the correct heating process

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, accessibility of the item, and local industry and regional contexts) are included.

Materials include one (1) or more of the following:

- low/high carbon steels
- alloys
- stainless steel
- lead

Material calculations include one (1) or more of the following:

- thermal expansion/contraction
- material wastage

Hammer tools and formers include one (1) or more of the following:

- flatters
- set hammers
- hot/cold sets
- ball peen hammer
- swages

Defects include one (1) or more of the following:

- galls
- fins
- shrinkage
- oxidation

Heating process includes one (1) or more of the following:

- diesel
- electric and gas furnaces
- coke fires
- gaseous oxygen/fuel equipment

Unit Mapping Information

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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>

Assessment Requirements for MEM06002 Perform hammer forging

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- calculating material requirements for hammer forging allowing for thermal expansion and wastage
- selecting and using hammer tools and formers
- setting up and operating forging machines
- using hammer forging techniques to forge material to specification
- detecting forging defects and rectifying forging techniques
- operating heating equipment and safely handling hot metal.

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)
- hammer forging techniques
- set up and operation of forging machines
- safe techniques for handling hot metal
- oxidation/shrinkage allowances for forging material
- calculations and formulae for determining the volume and weight of material
- forging material specifications

Assessment Conditions

- Assessors must:
 - have vocational competency in performing hammer forging 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. This must 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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