



Australian Government

Department of Education, Employment and Workplace Relations

MEM06002B Perform hammer forging

Release: 1

MEM06002B Perform hammer forging

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers using hammer tools and formers, selecting material, and applying hammer forging techniques.
------------------------	--

Application of the Unit

Application of the unit	The unit applies to the use of hammer forging techniques on carbon and alloy steels using various techniques, tools, formers, power hammers and heating devices. Equipment range does not include drop and upset machinery, vacuum furnaces or rolling and extruding mill machinery. Band: A Unit Weight: 4
--------------------------------	---

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use hammer tools and formers	1.1. Hammer tools and formers are correctly selected for specific forging technique. 1.2. Hammer tools and formers are used correctly. 1.3. Forging machine is set up and operated correctly.
2. Apply hammer forging techniques	2.1. Appropriate hammer forging technique is selected and applied. 2.2. Defects are recognised and appropriate rectification action is taken. 2.3. Correct techniques are applied to the handling of hot metal with regard to balancing and pivoting. 2.4. Correct heating process is applied.
3. Select material	3.1. Material calculations are made using volumes and weights that include provision for oxidation and shrinkage. 3.2. Material is correctly selected for use with specific tools and formers.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- using hammer tools and formers
- setting up and operating forging machines
- following job instructions, drawings, specifications
- detecting forging defects
- rectifying forging techniques
- safely handling hot metal
- correctly heating material being forged
- calculating volume and weight of material

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- hammer forging techniques
- the set up and operation of forging machines
- techniques for handling hot metal
- oxidation/shrinkage allowances
- numerical operations and formulae for determining the volume and weight of material
- material specifications
- hazards and control measures associated with hammer forging, including housekeeping
- use and application of personal protective equipment
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hammer forging techniques to carbon and alloy steels using various techniques, tools, formers, power hammers and heating devices.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

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 an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with hammer forging or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

Guidance information for

EVIDENCE GUIDE**assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Hammer tools and formers

Flatters, set hammers, hot/cold sets, ball peen hammer, swages, etc.

Defects

Galls, fins, shrinkage, oxidisation, etc.

Material calculations

Thermal expansion/contraction, material wastage

Heating process

Diesel, electric and gas furnaces; coke fires and gaseous oxygen/fuel equipment

Material

Low/high carbon steels, alloys, stainless steel, lead, etc.

Unit Sector(s)**Unit sector****Co-requisite units****Co-requisite units**

Competency field

Competency field	Forging
------------------	---------