



Australian Government

MEM08010 Manually finish/polish materials

Release: 1

MEM08010 Manually finish/polish materials

Modification History

Release 1. Supersedes and is equivalent to MEM08010B Manually finish/polish materials

Application

This unit of competency defines the skills and knowledge required to finish and polish materials using appropriate media and equipment.

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 power tools/hand held operations is required unit MEM18002 Use power tools/hand held operations should also be selected.

This unit is not intended to apply to touch-up finishing related to maintenance or assembly activities.

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

Band: A

Unit Weight: 6

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools

Competency Field

Surface finishing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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, job sheets or work instructions
2	Identify job materials and surface condition	2.1	Identify common metals, alloys and non-metals for finishing
		2.2	Identify common surface imperfections
3	Select appropriate finishing/polishing procedure	3.1	Determine surface finish specifications and select appropriate finishing or polishing method/technique for the work requirements
		3.2	Select appropriate finishing or polishing equipment for the work material and work requirements
		3.3	Select appropriate media for work requirements
4	Install and set up grinding and polishing devices according to standard operating procedures	4.1	Fit endless belt liners
		4.2	Fit and dress grinding wheels and mops
		4.3	Install and set up polishing mops
5	Grind, finish, brush and/or polish job	5.1	Identify hazards and implement risk control measures and procedures
		5.2	Finish job surface to specification according to SOPs

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.

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

- pre-decorative and post decorative plating
- jewellery production
- component manufacture and machining
- marine vessel construction

Material includes one (1) or more of the following:

- cast iron
- steel
- zinc and its alloys
- copper
- aluminium and its alloys
- bronzes
- sterling silver
- gold
- plastics

Common surface imperfections include one (1) or more of the following:

- pitted surface
- machining lines
- scale
- rust

Finish includes one (1) or more of the following:

- brightness
- texture
- roughness comparison

Finishing/polishing equipment includes one

- endless belt grinders
- table finishers

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.

(1) or more of the following:

- pedestal grinders and polishers
- felt wheels
- fabric mops and brushes with underhand and overhand techniques
- flexible drive appliances
- buffing compounds
- cutting compounds
- abrasive belts

Finishing/polishing media includes the following:

- solid and liquid compositions containing alumina, silicon carbide, diamond dust, tripoli, calcium oxide and iron oxides

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

- airborne dust inhalation
- unsecured components

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 MEM08010 Manually finish/polish materials

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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
- selecting appropriate finishing process, media and equipment to manually finish metal and plastic materials
- installing and setting up grinding and polishing devices and equipment
- assessing the surface condition of materials to determine the necessary finishing treatment
- safely applying techniques, including grinding, brushing and/or polishing to meet specifications.

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)
- surface finishing specifications
- procedures, tools and techniques for fitting and adjusting endless belts on finishing machines
- procedures, tools and techniques required to fit and dress grinding wheels and mops
- procedures tools and techniques for installing and setting up polishing mops
- characteristics of common metals, alloys and plastics relevant to finishing work
- finishing and polishing methods/techniques and the appropriate polishing media to be used in finishing/polishing for different types of materials
- effect of different types and grades of polishing media on the surface finish
- reasons for selecting a specific method/technique
- common surface imperfections/defects and how they can be removed/repared by manual finishing/polishing procedures
- procedures for handling components with surface imperfections/defects that cannot be removed/repared
- methods and techniques to check for conformance to finishing specifications.

Assessment Conditions

- Assessors must:
 - have vocational competency in manually finishing and polishing 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. 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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