



Australian Government

MEM04039 Assemble plated patterns

Release: 1

MEM04039 Assemble plated patterns

Modification History

Release 1. Supersedes and is equivalent to MEM04012 Assemble plated patterns (Release 2).

Application

This unit of competency defines the skills and knowledge required to assemble plated patterns using a range of materials. It includes the manufacture and mounting of runner systems.

Where the manufacture of polymer-plated patterns is required, unit MEM04038 Produce polymer patterns should also be selected.

Where the selection and use of cast aluminium plates is required, unit MEM04041 Develop and manufacture production patterns should also be selected.

Where the selection and use of precision measurement is required, unit MEM12003 Perform precision mechanical measurement should also be selected.

Where the selection and use of machining competencies is required, applicable units should also be selected.

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

Band: A

Unit Weight: 8

Pre-requisite Unit

MEM04018 Perform general woodworking machine operations

MEM09002 Interpret technical drawing

MEM11011 Undertake manual handling

MEM12006 Mark off/out (general engineering)

MEM12023 Perform engineering measurements

MEM12024 Perform computations

MEM12026 Perform advanced trade calculations in a manufacturing, engineering or related environment

MEM13015 Work safely and effectively in manufacturing and engineering

MEM14006 Plan work activities

MEM16006 Organise and communicate information

MEM18001 Use hand tools

MEM18002 Use power tools/hand held operations

Competency Field

Casting and moulding

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
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
2. Inspect and layout patterns	2.1 Inspect pattern to ensure dimensions and surface finish conforms to specifications 2.2 Lay out pattern and runner system to specifications 2.3 Align pattern to specifications
3. Mount pattern on plates	3.1 Attach cope and drag patterns or double sided match plate patterns to pattern plate/s according to specifications 3.2 Inspect cope and drag patterns or double sided match plate patterns for security and alignment
4. Mount runner system	4.1 Adjust volume of runner system to conform to specifications 4.2 Attach runner components pattern plates to specifications using appropriate fixing and joining techniques
5. Inspect plated pattern assembly	5.1 Inspect surface and mouldability of plated pattern assembly for compliance with specifications

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

<i>Specifications include one or more of the following:</i>	• drawings • job sheets • work instructions.
Materials include one or more of the following:	• timber • timber composite • metal.
Aligned includes one or more of the following:	• measurement • dowels.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM04012 Assemble plated patterns (Release 2).

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 MEM04039 Assemble plated patterns

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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 and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications and other applicable reference documents to assemble plated patterns
- undertaking relevant engineering calculations, including the determination of contraction rates
- inspecting patterns for conformance, laying out pattern and runner system and aligning pattern to specifications on at least two occasions
- securely attaching cope and drag patterns or double sided match plate patterns to pattern plates, inspecting for alignment to specifications, on at least two occasions
- attaching runner components pattern plates using appropriate fixing and joining techniques and adjusting volume of runner system to conform to specifications, on at least two occasions
- inspecting plated pattern assembly including surface and mouldability for compliance with specifications.

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:

- safe work practices and procedures and use of personal protective equipment (PPE)
- units of measurement, numerical operations and calculations associated with assembling plated patterns
- fixing and drilling techniques
- reason for using particular layout and runner system
- types of plated patterns using different materials
- techniques for avoiding cross-jointing or mismatch of the pattern and their relationship to the pin-centre
- methoding systems
- mouldability including surface finish, face taper, convex or concave perspectives and undercuts

- moulding and casting techniques.
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Assessment Conditions

- Assessors must:
 - have vocational competency in assembling plated patterns 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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