



Australian Government

Department of Education, Employment and Workplace Relations

MEM25013B Produce three-dimensional plugs/moulds

Release: 1

MEM25013B Produce three-dimensional plugs/moulds

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers manufacturing three dimensional plugs and, where applicable, solid and/or split moulds constructions used in marine vessel construction.
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Application of the Unit

Application of the unit	Work may be undertaken autonomously or as part of a team. Predetermined standards of quality and safety are observed and work is carried out following standard operating procedures relevant to industry standards. Tasks may include the use of hand and mechanical lay-up practices for plug/mould construction. Hand tools/ power tools and workshop machinery/equipment can also be used in conjunction with construction practices. This unit has dual status and is to be regarded as both a Specialisation band A unit and Specialisation band B unit for progression to C5 (AQF level V). Band: A Unit Weight: 12
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM04018B	Perform general woodworking machine operations
	MEM09002B	Interpret technical drawing
	MEM12007D	Mark off/out structural fabrications and shapes
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations
	MEM25002B	Form and integrate fibre-reinforced structures
	MEM25003B	Set up marine vessel structures

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine plug requirements	1.1.Plug specifications are established from drawings, relevant documentation and client discussion, as appropriate. 1.2.Plug construction materials are selected in accordance with job requirements and specifications. 1.3.Plug coating materials are selected to meet specifications in accordance with organisational procedures. 1.4.Appropriate tooling and machinery are selected.
2. Construct plug	2.1.Plug material/s are accurately marked out in accordance with plug construction requirements. 2.2.Where applicable, plug release angles/taper, flanges and rounding/concaving of corners are carried out. 2.3.Appropriate tools, machine/s and construction practices are used to construct plug.
3. Finish plug	3.1.Plug is checked for compliance with specifications/drawing. 3.2.Where applicable, final finish coating/s is applied to plug where required to comply with specifications. 3.3.Where applicable, plug is prepared for mould manufacturing in accordance with specifications or standard operating procedures.
4. Determine mould requirements	4.1.Mould construction specifications and drawings are interpreted. 4.2.Mould construction materials are selected in accordance with specifications. 4.3.Appropriate tools and machinery/equipment are selected for job application.
5. Produce mould	5.1.Tooling coat is applied to plug in accordance with standard application procedures. 5.2.Construction materials are applied to plug in accordance with appropriate lay-up sequence and procedure. 5.3.Where applicable, stiffening/bracing materials are applied in accordance with job requirements. 5.4.Where applicable, mould is prepared for production run/s.

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:

- identifying materials, such as timber, plywood, fastenings, fillers etc. from specifications/drawings
- selecting and using hand tools, hand held power tools and workshop machinery to suit plug/mould construction
- marking out dimensions relevant to plug/mould components
- selecting and assembling materials
- constructing plugs and moulds
- modifying plugs/moulds through the addition of release angles/tapers, flanges, beads and rounding/concaving
- fitting reinforcement components and or materials
- checking external/internal dimensions against specification/drawings
- applying final finish coating/s
- sanding, buffing/polishing to preparing plug for mould lay-up
- removing and disposing of waste

Required knowledge

Look for evidence that confirms knowledge of:

- plug/mould construction materials, characteristics, applications
- plug/mould coating materials, characteristics, applications - including tooling coats
- correct dimensions and application procedures for marking out
- release angles/tapers, flanges, rounding/concaving of corner sections
- hand tools/hand held power tools and workshop machinery and their uses
- plug/mould construction methods
- if applicable, methods used to apply stiffening/bracing/reinforcement
- method of application and sequence of final finish coating
- procedures for sanding/buffing/polishing plug/mould
- fault identification and rectification
- waste removal and disposal 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 produce three-dimensional plugs/moulds. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

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. Where assessment occurs off the job, i.e. the candidate is not in productive work, 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 producing three-dimensional plugs/moulds, or other units requiring 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. 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.

EVIDENCE GUIDE**Guidance information for 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.

Materials

Timber, metal, plastic, fibreglass composites, fillers etc.

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

Co-requisite units		

Competency field

Competency field	Marine craft construction
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