



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MEM25005B Construct and assemble marine vessel timber components**

**Release: 1**

## **MEM25005B Construct and assemble marine vessel timber components**

### **Modification History**

Not Applicable

## Unit Descriptor

|                        |                                                                                                                |
|------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Unit descriptor</b> | This unit covers constructing and assembling marine timber components, including laminating by cold processes. |
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## Application of the Unit

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Application of the unit</b> | <p>This unit applies to marine vessel backbone components such as keel, deadwoods, stem etc., transverse and longitudinal framing, knees, deck framing, hull construction, laid deck construction and superstructures.</p> <p>Where hull is to be planked, planking may include but is not limited to carvel, strip, clinker, double diagonal systems. Fastenings, joining methods and sealing systems may vary according to application.</p> <p>Timber joinery must be appropriate for application and fixed to industry standards. This unit includes laminating by cold processes.</p> <p>A variety of hand and hand held power tools and workshop equipment such as bandsaw, surfacer and thicknesser etc. may be used for the construction and assembly practices.</p> <p>Where permanent timber bending practices are required, such as boiling/steam bending, Unit MEM25009C (Form timber shapes using hot processes) should also be selected.</p> <p><b>Band: A</b></p> <p><b>Unit Weight: 8</b></p> |
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## Licensing/Regulatory Information

Not Applicable

## Pre-Requisites

| Prerequisite units |           |                                                 |
|--------------------|-----------|-------------------------------------------------|
| <b>Path 1</b>      | 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            |

## Employability Skills Information

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|-----------------------------|------------------------------------------|
| <b>Employability skills</b> | This unit contains employability skills. |
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## Elements and Performance Criteria Pre-Content

|                                                                   |                                                                                                                                                                                                                                                                                                                  |
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| 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 job requirements                | <p>1.1. Required information is determined from drawings, instructions and specifications.</p> <p>1.2. Construction process is selected to suit job application.</p>                                                                                                                                                                                                                                                                                                                                                                                            |
| 2. Construct marine vessel timber components | <p>2.1. Appropriate tools/equipment are selected to suit job application.</p> <p>2.2. Template/measurement is selected to suit component construction.</p> <p>2.3. Material is dressed, sized and shaped to suit job requirements and specifications.</p> <p>2.4. Final form/shape of component is checked against template/measurement specification and modified if necessary.</p> <p>2.5. Component identification and set-up markings are applied.</p>                                                                                                      |
| 3. Assemble components                       | <p>3.1. Jig support assembly is set up to suit job requirements.</p> <p>3.2. Materials for fastening, joining and sealing are selected and used according to job specifications and requirements.</p> <p>3.3. Assembly and fastening sequence is determined.</p> <p>3.4. Material preservation requirements are carried out, if required.</p> <p>3.5. Components are assembled to specified line markings and positions.</p> <p>3.6. Assembled component meets specifications.</p> <p>3.7. Component assembly is cleaned/prepared to suit job requirements.</p> |

## 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:

**REQUIRED SKILLS AND KNOWLEDGE**

- interpreting specifications, drawings, instructions and procedures
- identifying job structure, templates, material types, construction detail and assembly practices
- using tools and equipment
- selecting and using templates for construction
- cutting, sizing, preparing and forming timber
- checking final form/shape of component
- assembling support jigs
- positioning and assembling components
- selecting and using fastening methods
- finishing and applying preservation materials
- cleaning excess material wastage
- undertaking waste disposal in accordance with legislative requirements

**Required knowledge**

Look for evidence that confirms knowledge of:

- component types/materials/templates and their uses
- characteristics, properties, specifications and uses of species, including durability, strength and appearance
- types, specification and uses of fasteners
- applicable codes and regulations
- methods used to take off measurements, mark out, construct and assemble components
- effect on access, rigidity, strength, buoyancy and resistance to stresses encountered at sea
- hand tools, power tools and workshop machinery to suit construction applications
- practices for cutting/dressing/sizing/shaping material
- measuring and marking out techniques using graduated devices, battens, templates, etc.
- procedures used in checking final form/shape
- clamping and shoring methods and the use of jigs
- procedures, codes and regulations used in applying relevant fastenings to suit assembly
- methods of cleaning, preserving and finishing components, their uses and safety precautions
- waste disposal obligations and regulations

## 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 construct and assemble marine vessel timber components. 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 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 constructing and assembling marine vessel timber components 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 should not require language, literacy and numeracy skills beyond those required in this unit. The candidate must have access to tools, equipment, materials and documentation required and must be permitted to refer to relevant workplace procedures/product and manufacturing specifications/codes/standards/manuals/reference materials.

#### Guidance information for

**EVIDENCE GUIDE**

|                   |  |
|-------------------|--|
| <b>assessment</b> |  |
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**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.

**Material**

Hardwood, softwood or plywood sheeting, or a combination

**Materials for fastening, joining and sealing**

Marine-grade adhesives; sealant and caulking materials; metal fasteners (copper/silicon bronze/monel/stainless steel etc.).

**Unit Sector(s)**

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|--------------------|--|
| <b>Unit sector</b> |  |
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**Co-requisite units****Co-requisite units**

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## Competency field

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| Competency field | Marine craft construction |
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