



Australian Government

Department of Education, Employment and Workplace Relations

MEM25012B Install and test operations of marine auxiliary systems

Release: 1

MEM25012B Install and test operations of marine auxiliary systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers installing and testing marine auxiliary systems. Where installation only is required, Unit MEM25015A (Assemble and install equipment and accessories/ancillaries) should be selected.
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Application of the Unit

Application of the unit	<p>This unit applies to practices for the installation and testing of auxiliary systems for marine vessels, such as bilge, freshwater, fire (water) and sanitary plumbing systems. Work may be undertaken autonomously or as part of a team.</p> <p>Lifting systems include davits, crane and winch units.</p> <p>Locations may include external and internal locations for foundations, footings, beds and frameworks etc. completed prior to installation and commissioning.</p> <p>All specifications are applied via engineering drawings, written or verbal instructions.</p> <p>Routine modifications and alterations are of a minor nature not requiring specification changes or technical recording.</p> <p>Testing should be undertaken in accordance with manufacturer specifications, guidelines, requirements and limitations.</p> <p>Testing procedures may include engineering practices for determining correct operational function of mechanical, fluid power systems, equipment, components and associated items.</p> <p>Tasks may be undertaken in a workshop/site, moored or in a sea trial situation. All work and work practices should be undertaken to regulatory and legislative requirements.</p> <p>Where installation only is required, Unit MEM25015A (Assemble and install equipment and accessories/ancillaries) should be selected.</p> <p>Band: A</p> <p>Unit Weight: 6</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations
	MEM13003B	Work safely with industrial chemicals and materials

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 job requirements	1.1. Job requirements are established from plans, specifications, verbal instructions or visual inspections. 1.2. Installation materials are identified. 1.3. Compatibility of surface and fitting materials is identified. 1.4. Installation site of system is identified.
2. Select auxiliary system	2.1. Auxiliary system is selected in accordance with job requirements. 2.2. Material structure and installation procedures are identified. 2.3. Associated installation/assembly, plans/instruction are identified and verified.
3. Install auxiliary system	3.1. Appropriate tools for specified installation are selected. 3.2. Where applicable, structural area is cut to suit installation requirements. 3.3. Where applicable, structural reinforcement is fitted to suit job requirement. 3.4. Structural area is prepared for surface preparation. 3.5. Coating sealants and/or isolation materials are applied to suit job requirements. 3.6. Fastening methods are applied to suit job application. 3.7. Installation procedures are applied in accordance with job specification. 3.8. Clean work practices are applied.
4. Test operation of auxiliary system	4.1. Pre-test checks are applied and verified before standard testing procedures are actioned. 4.2. Test operation procedures are identified and verified. 4.3. Where required, test equipment is correctly set up and used in accordance with testing practice. 4.4. System is tested in accordance with specified operational procedures. 4.5. Faults are recorded/reported to appropriate authorities. 4.6. Faults are rectified and re-tested for correct operation. 4.7. Final test operation is recorded and documented

ELEMENT	PERFORMANCE CRITERIA
	according to standard operating procedures.

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 material species such as metals, timber, resin and glass reinforcements from plans/drawing
- establishing compatibility of component material and structural surface
- identifying systems such as bilge, freshwater, plumbing
- selecting and using specific tools
- selecting and applying sealants, coatings/isolation materials, such as sikaflex, paints, flowcoat, nylon etc.
- selecting fastening method and type/materials species
- modifying structural components without compromising structural and watertight integrity
- assembling and installing systems in accordance with plans/verbal instruction
- maintaining/restoring watertight integrity
- disposing of waste materials
- testing and verifying correct system operation
- recording fault diagnosis information
- rectifying faults

Required knowledge

Look for evidence that confirms knowledge of:

- role of plans/specification used for installation of identified components
- species/types of materials and their uses
- compatibility of species/types of construction materials of component and surface
- material species/types of structure/system and installation process
- plans/instruction relevant to installation and assembly of selected system
- tools associated with system installation and their uses
- effects of sea-going stresses on structure and components
- practices used in modifying structural components, to suit system applications
- procedures for applying the reinforcement to structural section

REQUIRED SKILLS AND KNOWLEDGE

- method of sanding for surface preparation
- sealant coatings and/or isolation materials
- waste disposal obligations and regulations
- standard pre-testing checks
- role, function and set-up procedure of test equipment
- practice used in testing operation of installed system
- recording procedures for fault diagnosis and identification
- methods used for rectifying faults and re-testing of system operations
- test operation checklist and recording procedure for final test clearance

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 install and test operations of marine auxiliary systems. 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 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 installing and testing operations of marine auxiliary systems, 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. 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.

Test equipment

Mechanical, pneumatic/electro-pneumatic, electronic (analog/digital) and associated instruments that measure variables such as temperature, pressure, flow rate, levels, light, density or any other process variable

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

Co-requisite units		

Competency field

Competency field	Marine craft construction
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