



Australian Government

MARB008 Carry out basic welding, brazing, cutting and machining operations on a coastal vessel

Release: 1

MARB008 Carry out basic welding, brazing, cutting and machining operations on a coastal vessel

Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to carry out basic welding, brazing, cutting and machining tasks.

This unit applies to engine workers in the maritime industry working as a Marine Engine Driver Grade 1 Near Coastal on vessels up to 1500 kW.

This unit has links to legislative and certification requirements.

Pre-requisite Unit

Not applicable.

Competency Field

B - Equipment Checking and Maintenance

Unit Sector

Not applicable.

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1 Carry out basic welding tasks

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| 1.1 | Requirements for welding tasks are correctly interpreted from work instructions |
| 1.2 | Parts are prepared for welding according to established practice |
| 1.3 | Parts are welded according to established practice and work requirements |
| 1.4 | Weld defects are identified and appropriate action is taken according to established practice and standard operating procedures |

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| | 1.5 | Flame gouging methods are used to remove plate and weld material according to established practice and standard operating procedures |
| | 1.6 | Finished work is checked against work instructions for accuracy and quality |
| 2 Carry out basic brazing tasks | 2.1 | Requirements for brazing tasks are correctly interpreted from work instructions |
| | 2.2 | Parts are prepared for brazing according to established practice and work requirements |
| | 2.3 | Brazing equipment is prepared for brazing operations according to established procedures |
| | 2.4 | Parts are brazed using established procedures |
| | 2.5 | Finished work is checked against work instructions for accuracy and quality |
| 3 Carry out basic cutting tasks | 3.1 | Instructions are reviewed, and required size and shape of cut work is correctly identified and interpreted |
| | 3.2 | Work is correctly marked out in preparation for cutting according to established practice and standard operating procedures |
| | 3.3 | Thermal cutting plant and equipment is set up according to established procedures |
| | 3.4 | Steel plate and/or rolled sections are cut to shape and size according to established practice and standard operating procedures |
| | 3.5 | Finished work is checked against work instructions for accuracy and quality according to standard operating procedures |
| 4 Carry out basic machining tasks | 4.1 | Requirements for basic machining tasks are correctly interpreted from work instructions according to standard operating procedures |
| | 4.2 | Work is correctly marked out in preparation for basic machining according to established practice and standard operating procedures |
| | 4.3 | Machine is set up according to established procedures |

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| | 4.4 | Machining is carried out according to established procedures |
| | 4.5 | Finished work is checked against work instructions for accuracy and quality according to standard operating procedures |
| 5 Follow safety and hazard control procedures | 5.1 | Required safety precautions and regulations are followed when carrying out basic welding |
| | 5.2 | Operational hazards are identified and action is taken to eliminate, or where elimination is not possible to minimise, risk to personnel |

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

Specifies 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.

Range is restricted to essential operating conditions and any other variables essential to the work environment.

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| Operational hazards include one or more of the following: | <ul style="list-style-type: none">• moving and rotating machinery• moving heavy loads using unsafe procedures• non-compliance with safe working procedures• poor housekeeping procedures• power tools• sharp tools and implements• unsecured machinery, components or equipment• using equipment beyond safe working limits• using welding equipment near explosive/flammable liquids and gases |
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Unit Mapping Information

This is a new unit. This unit is equivalent to MARB4001A Carry out basic welding, brazing, cutting and machining operations on a coastal vessel.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>

Assessment Requirements for MARB008 Carry out basic welding, brazing, cutting and machining operations on a coastal vessel

Modification History

Release 1. New unit of competency.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and include:

- carrying out basic welding, brazing, cutting and machining tasks while underway, in port and moored or at anchor
- cleaning, sharpening or adjusting tools according to standard operating procedures
- dressing and truing a grinding wheel
- following required work schedule according to company requirements
- identifying a glazed, loaded or untrue grinding wheel condition and taking appropriate action
- marking out work to specifications, and measuring and checking the quality of finished work
- performing basic calculations required to carry out basic welding, brazing, cutting and machining operations
- reading and interpreting work specifications and drawings
- reading, interpreting and applying instructions and standard operating procedures relevant to basic welding, brazing, cutting and machining operations required on a coastal vessel
- recognising routine problems that may occur when performing basic welding, brazing, cutting and machining operations on a vessel and taking appropriate action
- selecting and safely using welding, brazing, cutting and machining tools and equipment according to operating procedures
- storing welding, brazing, cutting and machining tools and equipment after use according to standard procedures
- taking action promptly to report operational incidents and problems according to regulations and shipboard procedures
- using effective verbal and other communication skills required when carrying out basic welding, brazing, cutting and machining operations on a vessel
- working safely and collaboratively with others when carrying out basic welding, brazing, cutting and machining operations on a vessel.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- applicable sections of relevant maritime regulations

- applicable legislation, regulations and codes of practice:
 - National Standard for Commercial Vessels (NSCV) and Uniform Shipping Laws (USL) Code
 - relevant Australian engineering standards
 - relevant state and territory marine regulations
 - relevant work health and safety (WHS)/occupational health and safety (OHS) and pollution control legislation and policies
- basic operations within area of own responsibility:
 - basic fillet welds
 - basic butt welds
 - basic pad welds
 - manual metal arc welding
 - oxygen acetylene welding
 - basic machining operation
- characteristics and identifying features of common engineering drill bits
- documentation and records:
 - maintenance records
 - manufacturer instructions for tools and equipment
 - relevant safety data sheets (SDS)/material safety data sheets (MSDS)
 - safety management system plans, procedures, checklists and instructions
 - work instructions
 - vessel and company procedures
- environmental protection measures when carrying out basic engineering tasks
- hazards and related safety precautions when carrying out basic welding, brazing, cutting and machining tasks
- procedures for:
 - identifying a glazed, loaded or untrue grinding wheel condition
 - dressing and/or truing a grinding wheel
- safety management system and procedures
- standard operating procedures for basic welding, brazing, cutting and machining tasks required of a Marine Engine Driver Grade 1
- standard procedures for marking out work to specifications and measuring and checking the quality of finished work, including the correct use of:
 - adjustable gauge
 - callipers
 - centre punch hammers
 - dividers
 - rules and tapes
 - scribes
 - squares
 - trammels

- vernier callipers and micrometer
- techniques for identifying defective welds within limits of responsibility
- types, names and identifying features of drilling machines used on coastal maritime vessels
- typical work specifications and drawings used on a coastal vessel.

Assessment Conditions

Assessors must satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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.

Resources for assessment must include access to:

- tools, equipment, machinery, materials and personal protective equipment currently used in industry
- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- range of relevant exercises, case studies and/or simulations.

Links

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