



**Australian Government**

# **MARF010 Work safely in confined spaces on a vessel**

**Release: 1**

# MARF010 Work safely in confined spaces on a vessel

## Modification History

Release 1. New unit of competency.

## Application

This unit involves the skills and knowledge required to enter and work safely in confined spaces on a vessel.

This unit applies to all maritime employees who could be required to work in, on or around confined spaces on board a vessel.

This unit has links to legislative and certification requirements.

## Pre-requisite Unit

Not applicable.

## Competency Field

F - Operational Quality and Safety

## 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.

<b>1 Identify confined spaces and their regulatory framework</b>	1.1	Characteristics of a confined space are outlined
	1.2	Confined spaces in the workplace are identified
	1.3	Regulations and standards relevant to confined space operations on vessels are identified
	1.4	Relevant codes of practice and sources of guidance for undertaking confined space work are identified
	1.5	Potential hazards of confined spaces are identified
<b>2 Assess confined space for entry</b>	2.1	Purpose and need to enter confined space is confirmed
	2.2	Hazards in and around confined space and those associated

- with work to be performed are identified
- 2.3 Risk assessment is conducted and documented according to organisational procedures
- 2.4 Risk control measures are identified and documented
- 3 Obtain permission to enter confined space**
- 3.1 Process and documentation required for authorisation to enter confined space are identified
- 3.2 Permission to enter and work in confined space is sought from authorised personnel on vessel according to regulatory and organisational requirements
- 3.3 Permit requirements associated with confined space entry and work to be performed are confirmed and completed
- 4 Plan and prepare for entry**
- 4.1 Appropriate plan is prepared for completion of work activity in confined space
- 4.2 Process is followed to ensure confined space is ready for entry
- 4.3 Appropriate personal protective clothing and equipment is selected and used correctly
- 4.4 Entry equipment is made ready and used according to manufacturer operating instructions
- 4.5 Precautions during entry are identified to protect occupants
- 5 Apply emergency procedures**
- 5.1 Role and responsibilities of standby person/s are clearly defined
- 5.2 Planned emergency procedures appropriate for circumstances are implemented
- 5.3 Personal protective equipment and emergency rescue equipment is selected, prepared and used
- 6 Conclude confined space operations**
- 6.1 Personnel involved and equipment used are accounted for
- 6.2 Equipment is cleaned, inspected and/or serviced prior to stowage
- 6.3 Confined space entry is secured, isolations are removed and space is returned to normal
- 6.4 Permit is withdrawn and documentation is completed according to regulatory requirements and organisational

policy

## 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.

Characteristics of a confined space must include:

- those described in the Occupational Health and Safety (Maritime Industry) (National Standards) Regulation and/or Australian Standard (AS/NZS) 2865 Safe working in a confined space

Confined spaces include one or more of the following:

- ballast tanks
- battery lockers
- boilers
- cargo tanks/holds
- chain lockers
- cofferdams
- compressor rooms
- double bottoms
- duct keels
- engine components
- fuel tanks
- furnaces
- inert gas scrubber plants
- pump rooms
- sewage tanks

- storage areas for fixed fire extinguishing media
- trunking and pressure vessels
- void spaces

Regulations, standards and codes of practice must include:

- Code of Safe Working Practice for Australian Seafarers - Section 10 Entering and working in enclosed or confined spaces
- International Safety Management (ISM) Code
- Navigation Act 2012
- Occupational Health and Safety (Maritime Industry) (National Standards) Regulations 2003

Regulations, codes of practice and standards include one or more of the following:

- AS/NZS 2865 Safe working in a confined space
- International Maritime Organization (IMO) Resolution A 1050 (27) Revised Recommendations for Entering Enclosed Spaces Aboard Ships
- International Maritime Solid Bulk Cargoes (IMSBC) Code
- International Safety Guide for Oil Tankers and Terminals (ISGOTT)
- Liquefied Gas Handling Principles on Ships and in Terminals (SIGTTO)
- shipboard confined /enclosed space entry procedures

Vessels include:

- any Australian or international commercial vessel or unit

Hazards include one or more of the following:

- cold pipes and valves (refrigeration and liquefied gases etc.)
- dangerous goods in packaged form
- electricity and wiring systems
- flammable or explosive atmospheres
- free flowing solids
- height
- hot pipes (steam, fuel oil, lubricating oils etc.)
- manual handling
- moving equipment
- noise
- oxygen deficiency or enrichment
- physical obstructions such as transverse frames and floors
- poor visibility
- products or processes in adjacent spaces
- restricted access

- rising liquids
  - slippery or uneven surfaces
  - temperature extremes
  - toxic liquids, solids, gases, vapours and dusts
  - vibration
- Risks include one or more of the following:
- asphyxiation
  - contamination
  - engulfment
  - falling
  - fire or explosion
- Risk control measures include one or more of the following:
- atmospheric testing
  - barricading
  - cleaning
  - de-energising
  - isolation
  - lockout
  - purging
  - signage
  - tag out
  - ventilation
- Authorised personnel include one or more of the following:
- Master
  - Delegated Safety Officer
  - Chief Mate
  - Chief Engineer
  - 1<sup>st</sup> Engineer
- Permit requirements include one or more of the following:
- atmospheric testing results
  - cold work permit
  - communications
  - competent person who has control of the space and the authorising officer's signature
  - date and period of validity
  - hazards that are likely to be present
  - height permit
  - hot work permit
  - isolation checklist

- locations of the space
- need for respiratory protection
- personal protection clothing required
- personal protective equipment required
- person/s entering
- rescue arrangements and emergency equipment
- risk control measures
- standby person/s

Ready for entry include one or more of the following:

- communications understood and tested
- control measures confirmed and implemented
- development of an appropriate plan to complete works in the space
- emergency plan confirmed as appropriate or modified and equipment in position at the ready
- method of safe entry and exit in place
- permit/s signed by the Responsible Officer and posted
- safe atmosphere confirmed (or relevant measures in place to ensure safe entry into an unsafe atmosphere)
- space is secured
- standby person/s identified and in position

Personal protective clothing and equipment include one or more of the following :

- atmospheric monitoring equipment
- chemically resistant splash suits
- coveralls
- gloves
- harness and restraint equipment
- helmet
- respiratory protection (self rescue devices and self contained breathing apparatus [SCBA])
- safety boots
- safety glasses or goggles

Entry equipment include one or more of the following:

- anchor straps and/or anchor points
- atmospheric testing and monitoring equipment
- confined space harnesses
- fall arrest systems equipment
- intrinsically safe torches/lifting
- lifeline/signalling line
- lockout kit

- retractable lanyard/s
- rope kit/winch
- SCBA
- signage
- tripod
- ventilation fan and ducting

Precautions during entry include one or more of the following:

- atmosphere must be tested prior to entry, before re-entry and at frequent intervals
- atmospheric monitoring must occur during occupancy
- if conducting prolonged work activities or in extreme temperatures, regular breaks should be taken
- if entry to unknown or unsafe atmospheres cannot be avoided the use of suitable breathing apparatus e.g. airline or self-contained should be employed
- occupants must be provided with calibrated and tested multi-gas detectors
- standby person must maintain communications with occupants and relevant personnel
- ventilation must continue while the space is occupied

Role and responsibilities of standby person/s include:

- as defined in Regulation 4.18 Part 4 of the Occupational Health & Safety (Maritime Industry) (National Standards) Regulation

Emergency rescue equipment includes one or more of the following:

- atmospheric monitoring equipment
- emergency escape breathing devices
- first aid kit
- harnesses
- helmets
- lighting
- oxygen resuscitation kit
- rescue ropes
- rope recovery kit
- SCBA
- stretcher
- tripod



## Unit Mapping Information

This is a new unit. This unit is equivalent to MARF3007A Work safely in confined spaces on a vessel.

## Links

Companion Volume implementation guides are found in VETNet -

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