



Australian Government

DEFWDV034 Perform non-technical structural inspections under water

Release: 1

DEFWDV034 Perform non-technical structural inspections under water

Modification History

Release 1. This is the first release of this unit of competency in the DEF Defence Training Package.

Application

This unit describes the performance outcomes, skills and knowledge required to conduct underwater non-technical structural inspections, such as examining bridges, piers or ship hulls.

It includes preparing and conducting general qualitative underwater inspections (visual and manual), as well as quantitative analysis such as taking basic measurements, including angles, dimensions and lengths.

This unit relates, in part, to existing standards in the Australian Diver Accreditation Scheme (ADAS).

This unit applies to person working as Defence divers but is applicable to all individuals who work in this field.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies, dive plan and procedures must be consulted and adhered to.

Persons undertaking this unit work independently and perform routine tasks in a range of contexts that could be unpredictable.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

Defence Work Diving.

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

1 Prepare for underwater inspection

- 1.1** Identify and determine inspection task, target and available worksite data
- 1.2** Develop inspection plan consistent with organisational procedures
- 1.3** Select and inspect inspection equipment to meet task requirements
- 1.4** Secure inspection equipment safely for transport to and from dive site
- 1.5** Identify obstructions and underwater hazards, assess risks and manage risk control measures in accordance with dive plan

2 Conduct underwater inspection

- 2.1** Secure inspection equipment on self for ease of accessibility and lack of interference to mobility and dive equipment
- 2.2** Clear dive area surface of debris and/or marine growth in accordance with inspection plan
- 2.3** Conduct visual analysis of dive area to identify significant features or defects
- 2.4** Measure underwater structures and record lengths, gaps angle and holes in accordance with inspection plan and task requirements
- 2.5** Take appropriate visual imagery of target

3 Complete post-inspection procedures

- 3.1** Undertake activity to de-service and store inspection equipment after use
- 3.2** Report inspection outcomes and identified faults in accordance with organisational procedures and inspection plan.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of

competency.

Range of Conditions

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

Non-essential conditions may be found in the DEF Defence Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to DEFWDV011 Perform non-technical structural inspections underwater.

Links

Companion Volume Implementation Guides are found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6bdbab1e-11ed-4bc9-9cba-9e1a55d4e4a9>

Assessment Requirements for DEFWDV034 Perform non-technical structural inspections under water

Modification History

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Performance Evidence

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

- applying relevant industry standards, organisational policies and procedures
- applying SCUBA, surfaced supplied and/or CCBA operating techniques
- completing underwater dives
- conducting an inspection task requiring angular and linear measurements on one of the following:
 - pier/bridge – assessment is to be constructed around the examination of an existing pier/bridge requiring some expedient reinforcement to make fit for operational use
 - ship's hull – assessment is to be constructed around a sonar dome housing inspection and poker/feeler gauge surveys
- developing inspection plan in accordance with relevant organisational procedure
- documenting non-technical inspection report
- maintaining records according to organisational policies and procedures
- making underwater field notes and sketches
- measuring and recording underwater structure lengths, gaps, angles and holes in accordance with inspection plan
- planning underwater inspection requirements
- providing information for an inspection report
- taking measurements under water
- wearing of self-contained underwater breathing apparatus (SCUBA), surface-supplied and/or closed-circuit breathing apparatus (CCBA).

Knowledge Evidence

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

- dive equipment
- dive physics
- dive physiology and medicine, including:
 - compression illnesses

- decompression illnesses
- heat and cold illnesses
- diving descent and ascent techniques
- general diving safety awareness, including:
 - diving in harbours
 - diving in tidal waters, currents and tides
 - diving on and/or near a ship's bottom
 - entrapment/foul lines
 - lost/separated
 - marine animal threats
 - pollution/weeds
 - working in confined spaces
- oceanography
- organisational policies and procedures
- relevant architecture of piers and bridges
- relevant documentation and inspection proformas
- relevant industry standards
- relevant mechanics requirements
- relevant pier/bridge non-technical structural assessment techniques
- relevant ship's hull non-technical structural assessment techniques
- SCUBA, surface-supplied and/or CCBA operating techniques
- underwater workplace hazards.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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 replicate 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:

- a range of relevant exercises, case studies and/or simulations
- applicable documentation, including legislation, regulations, codes of practice, workplace procedures and operation manuals
- documentation specific to the dive operation, including dive plan and risk assessment
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE)

currently used in industry.

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