



Australian Government

DEFDV011B Perform non-technical structural inspections underwater

Release: 2

DEFDV011B Perform non-technical structural inspections underwater

Modification History

Release	TP Version	Comments
2	DEF12 V2	Layout adjusted. No changes to content.
1	DEF12 V1	Primary release.

Unit Descriptor

This unit covers the competency required to conduct non-technical structural inspections such as examining bridges, piers or ships' hulls.

The unit includes general qualitative inspection (visual and manual) as well as quantitative analysis such as the taking of basic measurements including angles, dimensions and lengths.

Note: Elements of this assessment are aligned with the existing standards of the Australian Diver Accreditation Scheme (ADAS). All information was correct at the time of development of this Unit of Competency; however, any diver seeking ADAS accreditation should consult ADAS and not rely on the information contained in this unit.

Application of the Unit

As agreed in the creation of this Training Package, applications for units transferred from the PUA00 Public Safety Training Package will be developed as part of continuous improvement plans, and taking into account the change in Unit of Competency format as detailed in templates for Streamlined Training Packages.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

DEFDV001B Dive using self-contained underwater breathing apparatus in open water to 30 metres.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for underwater inspection	1.1 Inspection task, target and available worksite data are determined and analysed. 1.2 Inspection plan is developed consistent with the dive plan. 1.3 Inspection equipment is selected, inspected and prepared. 1.4 Inspection equipment is secured safely to/from the dive site. 1.5 Access obstructions and other hazards are assessed and action is taken to remove/reduce the risk.
2. Conduct underwater inspection	2.1 Inspection equipment is secured on self for ease of accessibility and lack of interference to mobility and dive equipment. 2.2 Target's surface is cleared of debris and/or marine growth. 2.3 Visual analysis of target is conducted to identify significant features or defects. 2.4 Lengths, gaps angles and holes are measured relative to a fixed datum and results are recorded. 2.5 Visual imagery is taken of the target.
3. Conduct post-inspection procedures	3.1 Inspection equipment is de-serviced and stored after use. 3.2 Non-technical inspection report is drafted and submitted according to organisational procedures.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required Skills

- ability to dive
- make oral presentations
- make underwater field notes and sketches
- measure instruments
- take photographs
- write reports

Required Knowledge

- basic architecture of piers and bridges
- basic mechanics
- dive physics
- dive equipment
- general occupational/diving safety awareness
- oceanography
- relevant references and Australian Standards
- work hazards

Evidence Guide

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to assist in providing information for an inspection report; to carry and secure the equipment throughout the dive; and to work safely throughout the operation.

Consistency in performance

Competency should be demonstrated 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.

Context of and specific resources for assessment

Context of assessment

Competency should be assessed in the ocean supported by questioning on shore or aboard vessels.

When practicable, assessment should relate to the diver's vocational focus.

Assessment should be conducted over a time frame that allows for the safe demonstration of competency.

Specific resources for assessment

Access to a complete range of diving, safety and accessory equipment; and inspection equipment.

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 in the Performance Criteria is detailed below.

<i>Target</i> may include:	• buried treasure • ships including: • general hull integrity • specific examination of critical components (e.g. rudder, sonar, intakes etc.) • sub-structures including: • cabling • intakes (e.g. dams) • jetties • pipelines • rigs/platforms • sunken conveyances: • vehicles • vessels
<i>Worksite data</i> may include :	• current • depth • gradient • hazards • obstacles • temperature
<i>Inspection equipment</i> may include:	• angle measurement devices: • poker gauge • feeler gauge • tape measures
<i>Action to remove/reduce the risk</i> may include:	• erecting signage • using patrol/sentry craft
<i>Visual imagery</i> may include:	• hard wired video • still • underwater camera
<i>Report</i> may include:	• imagery • oral presentation • scaled drawings • sketches • supporting documents

Unit Sector(s)

Not applicable.