



**Australian Government**

# **SFIDIVE310A Perform diving operations using SSBA**

**Release 1**

## SFIDIVE310A Perform diving operations using SSBA

### Modification History

Release	TP Version	Comment
1	SFI11v2	Initial release. Supersedes and is not equivalent to <i>SFIDIVE302B Perform diving operations using surface-supplied breathing apparatus</i>

### Unit Descriptor

This unit of competency involves pre-dive preparations for occupational diving operations, undertaking occupational diving to a maximum depth of 30 metres using surface-supplied breathing apparatus (SSBA) and completing occupational post-dive activities in the seafood industry, including public aquaria and other live holding facilities.

Licensing, legislative, regulatory or certification requirements may apply to this unit. Therefore it will be necessary to check with the relevant state or territory regulators for current licensing, legislative or regulatory requirements before undertaking this unit.

### Application of the Unit

Completion of this and other diving units may lead to further accreditation in occupational diving by industry and/or regulatory authorities. Check with the relevant industry or regulatory body for specific requirements.

All enterprise or workplace procedures and activities are carried out according to ***relevant government regulations, licensing and other compliance requirements***, including ***occupational health and safety (OHS) guidelines, maritime and occupational diver codes of practice and*** procedures and ***ecologically sustainable development (ESD) principles***.

Equipment operation, maintenance, repairs and calibrations are undertaken in a safe manner that conforms to manufacturer instructions. Appropriate ***personal protective equipment (PPE)*** is selected, checked, used and maintained.

### Licensing/Regulatory Information

Refer to Unit Descriptor

## Pre-Requisites

HLTFA311A Apply first aid

## Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for diving operations using SSBA	<p>1.1. <b>Equipment</b> is checked and prepared for a SSBA diving <b>operation</b> and defective equipment is marked and removed from service by the person in charge of the <b>diving operation</b></p> <p>1.2. PPE and diving equipment appropriate to the type and duration of the dive are donned in the correct sequence</p> <p>1.3. Before the dive, all surface-supply equipment is connected and checked for correct function line-up and readiness</p> <p>1.4. Before the dive, the reserve air-supply equipment is connected and checked for correct function and readiness</p> <p>1.5. A dive plan is prepared, all equipment to be used is checked, necessary <b>tools</b> selected, a risk assessment conducted and the dive recorded by the person in charge of the diving operation</p>
2. Perform underwater diving operations using SSBA	<p>2.1. Open-water diving operations to a maximum depth of 30 metres are undertaken using SSBA according to accepted industry occupational <b>diving guidelines</b></p> <p>2.2. Correct <b>decompression procedures</b> are followed</p> <p>2.3. Diver's tender duties are undertaken in an SSBA diving operation according to accepted industry occupational diving guidelines</p> <p>2.4. Effective <b>communication</b> is established and maintained</p> <p>2.5. SSBA is operated whilst divers are in the water</p>
3. Maintain effective work relationships within a dive team	<p>3.1. Effective <b>work relationships</b> are established and maintained within the dive team</p> <p>3.2. Effective teamwork is carried out and maintained</p> <p>3.3. Routine instructions are followed</p>
4. Complete activities after SSBA dive	<p>4.1. On completion of the SSBA diving operation, PPE and diving equipment are removed</p> <p>4.2. Post-dive equipment checks are carried out</p> <p>4.3. Equipment is decontaminated, cleaned and stored</p>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

Required skills include:

- carrying out post-dive equipment checks
- checking and preparing equipment for an SSBA diving operation
- decontaminating, cleaning and storing all equipment
- dressing correctly for the type and duration of the diving operation prior to entering the water
- diving in open water to a maximum depth of 30 metres using SSBA and:
  - appropriate operational techniques for the prevailing conditions
  - correct breathing techniques for the duration of the dive
  - correct techniques and rates for descent and ascent
- entering and exiting the water under various situations
- establishing and maintaining effective communication using:
  - correct voice procedures and the phonetic alphabet
  - hand and line signals
  - voice communication systems
- operating SSBA at pre-dive stage and checking all related equipment
- operating SSBA with divers in the water
- preparing a dive plan, checklist and risk assessment
- providing tender duties to another diver by:
  - assisting diver safely into and out of the water
  - conforming to operational procedures in dealing with diver's umbilical
  - monitoring diver's equipment and condition
- undressing correctly on completion of an SSBA diving operation
- using correct decompression procedures
- literacy skills to:
  - complete 'dive accident medical information' forms
  - follow an emergency action plan
  - keep records
  - read dive tables
  - read diver's first aid literature
  - read regulations and industry guidelines
- numeracy skills to:
  - make calculations involving pressure, volume and temperature relationships
  - use decompression information

**REQUIRED SKILLS AND KNOWLEDGE****Required knowledge**

Required knowledge includes:

- common equipment faults and consequences of incorrect use
- correct dressing and undressing sequence for SSBA
- decompression principles, tables and procedures
- diving physiology principles and appropriate medicine for SSBA diving operations
- function and operating method of each item used in an SSBA diving operation
- function and regulation of main and reserve air supplies
- legal and regulatory procedures and requirements
- methods to enter and exit the water
- minimum equipment required for an SSBA diving operation
- possible hazards associated with an SSBA diving operation and precautions to reduce risk
- pressure values for different depths and awareness of pneumofathometer
- principles of underwater communication systems
- testing, connection and maintenance procedures for SSBA
- various SSBA configurations and their key features

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<p>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.</p>	
<b>Overview of assessment</b>	
<p><b>Critical aspects for assessment evidence required to demonstrate competence in this unit</b></p>	<p>Assessment must confirm the ability to:</p> <ul style="list-style-type: none"> <li>• carry out post-dive equipment checks</li> <li>• complete pre-dive preparations for occupational diving operations</li> <li>• dress correctly for diving operations and undress correctly at completion of a dive</li> <li>• operate SSBA at pre-dive stage and while in the water</li> <li>• perform tender duties for a diver</li> <li>• undertake a dive in open water to a maximum depth of 30 metres using SSBA</li> <li>• use decompression principles, tables and procedures</li> <li>• use, maintain and store equipment, including:             <ul style="list-style-type: none"> <li>• breathing apparatus - demand type (band mask and helmet) and free-flow type</li> <li>• buoyancy compensator</li> <li>• depth-measuring instruments</li> <li>• dive computer</li> <li>• diver's clothing</li> <li>• diving watch</li> <li>• gauges</li> <li>• main and reserve air supplies</li> <li>• safety harness</li> <li>• shot-line</li> <li>• surface-supply panel</li> <li>• umbilicals</li> <li>• weights, fins and masks</li> </ul> </li> </ul> <p>Assessment must confirm knowledge of:</p> <ul style="list-style-type: none"> <li>• anatomy, diving physics and physiology principles</li> <li>• diving equipment operating procedures</li> <li>• diving-related medical conditions and their</li> </ul>

<b>EVIDENCE GUIDE</b>	
	<p>treatments</p> <ul style="list-style-type: none"> <li>• hazards associated with SSBA diving operations</li> <li>• pre-dive and post-dive procedures</li> </ul>
<b>Context of and specific resources for assessment</b>	<p>Assessment is to be conducted at the workplace or in a simulated work environment.</p> <p>Resources may include:</p> <ul style="list-style-type: none"> <li>• suitable diving environment</li> <li>• diving equipment for SSBA diving operations as listed in the range of variables</li> </ul>
<b>Method of assessment</b>	<p>The following assessment methods are suggested:</p> <ul style="list-style-type: none"> <li>• observation of practical demonstration</li> <li>• written or oral short-answer testing</li> <li>• practical exercises</li> <li>• project work</li> </ul>
<b>Guidance information for assessment</b>	<p>This unit may be assessed holistically with other diving units.</p>



## 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.

<p><b><i>Relevant government regulations, licensing and other compliance requirements</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• business or workplace operations, policies and practices</li> <li>• ESD principles, environmental hazard identification, risk assessment and control</li> <li>• fisheries or aquaculture regulations, permits and licences</li> <li>• health and welfare of aquatic animals</li> <li>• Indigenous land rights and cultural activities</li> <li>• maritime and occupational diving operations, safety at sea and pollution control</li> <li>• OHS hazard identification, risk assessment and control</li> </ul>
<p><b><i>OHS guidelines</i></b> may include:</p>	<ul style="list-style-type: none"> <li>• appropriate workplace provision of first aid kits</li> <li>• codes of practice, regulations and/or guidance notes which may apply in a jurisdiction or industry sector</li> <li>• enterprise-specific OHS procedures, policies or standards</li> <li>• hazard and risk assessment of workplace, maintenance activities and control measures</li> <li>• induction or training of staff and contractors in relevant OHS procedures and/or requirements to allow them to carry out their duties in a safe manner</li> <li>• OHS training register</li> <li>• safe lifting, carrying and handling techniques</li> <li>• safe systems and procedures for outdoor work, including protection from solar radiation, confined space entry and the protection of people in the workplace</li> <li>• systems and procedures for the safe maintenance of property, machinery and equipment, including hydraulics and exposed moving parts</li> </ul>

<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"> <li>the appropriate use, maintenance and storage of PPE</li> </ul>
<i>ESD principles</i> may include:	<ul style="list-style-type: none"> <li>improving energy efficiency</li> <li>increasing use of renewable, recyclable and recoverable resource</li> <li>managing environmental hazard identification, risk assessment and control</li> <li>protecting native and protected flora and fauna, marine or land parks or areas, adhering to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the Ramsar Convention, World Heritage and other international treaties for which Australia is a signatory</li> <li>reducing emissions of greenhouse gases</li> <li>reducing energy use</li> <li>reducing use of non-renewable resources</li> </ul>
<i>PPE</i> may include:	<ul style="list-style-type: none"> <li>buoyancy vest or personal floatation device (PFD)</li> <li>personal locator beacon or Emergency Position Indicating Radio Beacon (EPIRB)</li> <li>sun protection (e.g. sun hat, sunscreen and sunglasses)</li> <li>exposure suits: <ul style="list-style-type: none"> <li>dry</li> <li>warmed</li> <li>wet</li> </ul> </li> </ul>
<i>Equipment</i> may include:	<ul style="list-style-type: none"> <li>breathing apparatus: <ul style="list-style-type: none"> <li>demand type (e.g. band mask and helmet)</li> <li>free-flow type</li> </ul> </li> <li>buoyancy compensator</li> <li>communication systems: <ul style="list-style-type: none"> <li>power supply</li> <li>tape recorders and tapes</li> <li>tools</li> <li>topside and diver</li> </ul> </li> <li>catch bags</li> <li>depth-measuring instruments</li> <li>dive computer</li> <li>diver's suits or clothing, wet, dry or warmed</li> </ul>

**RANGE STATEMENT**

	<ul style="list-style-type: none"> <li>• diving watch</li> <li>• gauges</li> <li>• main and reserve air supplies</li> <li>• safety and emergency: <ul style="list-style-type: none"> <li>• bail out bottle</li> <li>• first aid</li> <li>• oxygen</li> <li>• spare air</li> </ul> </li> <li>• safety harness</li> <li>• self-contained underwater breathing apparatus (SCUBA)</li> <li>• shot-line</li> <li>• SSBA</li> <li>• surface-supply compressor unit</li> <li>• surface-supply panel</li> <li>• umbilicals</li> <li>• weights, fins and masks</li> </ul>
<i>Operation</i> may include:	<ul style="list-style-type: none"> <li>• cleaning and maintaining display tanks</li> <li>• collecting aquatic animals: <ul style="list-style-type: none"> <li>• abalone</li> <li>• beche-de-mer</li> <li>• broodstock or seedstock</li> <li>• crayfish, lobsters and crabs</li> <li>• ornamental fish, live, rock, corals and other invertebrate</li> <li>• other molluscs</li> <li>• pearls</li> <li>• sea urchins and sponges</li> <li>• seaweed or aquatic plants</li> </ul> </li> <li>• collecting dead stock</li> <li>• collecting environmental water samples</li> <li>• eradicating or releasing predators <ul style="list-style-type: none"> <li>• from a beach</li> <li>• from a jetty</li> <li>• from a vessel</li> </ul> </li> <li>• installing, servicing and maintaining ponds, farm environment, cages and associated equipment</li> <li>• retrieving lost tools and equipment</li> <li>• tending aquaculture animals</li> </ul>

<b>RANGE STATEMENT</b>	
<b><i>Diving operation</i></b> may include:	<ul style="list-style-type: none"> <li>• single person dive</li> <li>• team dive</li> </ul>
<b><i>Tools</i></b> may include:	<ul style="list-style-type: none"> <li>• cleaning tools</li> <li>• cold chisels</li> <li>• files</li> <li>• hacksaws</li> <li>• hammers</li> <li>• harvest tools</li> <li>• imaging equipment and water quality testing</li> <li>• knives</li> <li>• netting needles and twine</li> <li>• open and ring spanners</li> <li>• screwdrivers</li> <li>• shackle spanners</li> <li>• shifting spanners</li> </ul>
<b><i>Diving guidelines</i></b> may include:	<ul style="list-style-type: none"> <li>• Australian Dive Accreditation System (ADAS)</li> <li>• Australian occupational dive standards</li> <li>• codes of practice</li> <li>• OHS codes of practice and regulations</li> <li>• other regulations relevant to the type of diving operation and area of activity</li> <li>• recreational dive industry standards</li> </ul>
<b><i>Decompression procedures</i></b> may include:	<ul style="list-style-type: none"> <li>• altitude restrictions</li> <li>• ascent rate</li> <li>• decompression restrictions</li> <li>• emergency</li> <li>• flight time exclusion</li> <li>• repetitive group</li> <li>• safety stops</li> <li>• surface interval</li> </ul>
<b><i>Communication</i></b> may include:	<ul style="list-style-type: none"> <li>• hand signals</li> <li>• lifeline signals</li> <li>• slate</li> <li>• voice</li> </ul>
<b><i>Work relationships</i></b> may include:	<ul style="list-style-type: none"> <li>• other divers</li> <li>• surface support team</li> <li>• vessel crew</li> </ul>

## **Unit Sector(s)**

Diving operations