Diving work | SafeWork NSW

Diving work

Information on managing the safety risks of diving work.

What is diving work

Diving work is work conducted in or under water while breathing compressed gas. It does not include snorkelling.
A range of professions involve diving work. These include:

- construction work
- maintenance work
- scientific diving
- photography
- aquaculture
- dive instruction and tourism.

Diving work is risky and can lead to severe injury or death. Injuries and fatalities happen because of faulty equipment, poor crew training or diver error.

There are 2 major categories of diving work defined in the WHS Regulations 2017 (Part 4.8 Diving Work). They are:

General Diving Work

General diving work is work conducted in or under water while breathing compressed gas. It can include:

Incidental diving work – work that is incidental to the conduct of a business. For example, an actor working on an underwater film and involves limited diving work. It can only be carried out if accompanied by a person holding a certificate for general diving work or high-risk diving work.

Limited scientific diving work – work done for professional scientific research, natural resource management or scientific research for education purposes and involves limited diving.

Limited diving – diving for less than 28 days in a 6-month period and for no more than 30 metres deep. You cannot:

- need a decompression stop
- use mechanical or buoyancy lifting equipment
- dive under things where you need to move sideways before ascending
- use tools or plant powered from the surface.

High risk diving work

High risk diving work is work conducted in or under water while breathing compressed gas that involves one or more of the following:

- construction work – construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure. This includes:
  - installation or testing
  - removing any demolition product or waste
  - the prefabrication or testing of elements
  - assembling or disassembling prefabricated elements that form a structure
  - installing, testing or maintaining of essential services of a structure
  - any work connected with an excavation
  - any preparatory work or site preparation for construction work
  - work on, under or near water, including work on buoys and obstructions to navigation
- inspection work carried out to determine if the above is necessary. For example, inspecting a component to determine if maintenance is required.
- testing, maintenance or repair work of a minor nature carried out in connection with a structure. For example, conducting non-destructive testing on a bridge pylon
- recovery or salvage of items of plant or structures for commercial purposes. For example, salvage of a vessel.

High risk diving work must be carried out in accordance with AS/NZS 2299.1 – Occupational diving operations, Part 1: Standard operational practice. That includes:

- the fitness of the diver
- the competence of the diver
- the conduct of the work.

Risks of diving work

The underwater environment presents a vast range of risks. This includes attack by marine life, drowning, entanglement or impact by marine vessels and the underwater environment.

To reduce the risk of harm, factors that must be considered before carrying out diving work are:

Physical fitness and preparedness

Divers must be physically fit and prepared to dive.

Decompression illness, hypothermia, nitrogen narcosis or oxygen toxicity can be caused by:

- a lack of sleep
- cold or heat stress
- dehydration
- exhaustion or altitude exposure
- prescribed or non-prescribed drugs other intoxicants
- respiratory conditions such as COVID-19
- intoxication from alcohol.

The safe blood alcohol concentration is 0.00%.

Surface conditions

Surface conditions at the dive site must be considered to ensure safety. These include:

- state of the water (rough seas, unusual tides or currents)
- weather
- visibility
- tide and currents
- air and water temperature
- other vessels or watercraft and any other local conditions.

In-water conditions

In-water conditions at the dive site must be considered to ensure diver safety. These include:

- visibility
- contaminants
- obstructions
- dangerous marine life
- thermoclines (rapid temperature changes with depth)
- pressure differentials and currents in the water.

How to do diving work safely

Employers (Persons Conducting a Business or Undertaking (PCBU)) have a responsibility to make sure diving work is conducted safely.

Safety issues that are minor on dry land can become extremely risky in the underwater environment.

PCBUs must apply the following legislative requirements when conducting any type of diving work.

Get a doctor's tick of approval

Your workers must hold a current certificate of medical fitness (valid for 12 months) that includes:

- the name of the person
- date of issue and expiry
- whether or not the person is medically fit to carry out diving work
- any conditions in relation to the type of diving work.

Your workers can get this certificate from a doctor who has been trained in underwater medicine. The medical assessment must be in accordance with AS/NZS 2299.1 2015 Occupational diving operations – Standard operational practice.

Ensure diver reports illness or injury to the dive supervisor

If the diver is feeling unwell or has any current or recent injuries or illness they should immediately report to the dive supervisor. The supervisor will assess whether the diver is fit to dive and complete the work.

Ensure diver is trained properly

PCBUs make sure your workers are properly trained for diving work.
Your workers must be skilled (through training, qualification and experience) in:

- understanding diving physics
- using, inspecting and maintaining diving equipment
- using decompression tables/dive computers
- planning dives
- communicating with other divers, and people on the surface while diving
- carrying out the proposed type of general diving work
- diving physiology, emergency procedures and first aid.

For diving work courses, refer to Training.gov.au or contact your local training organisation.

Provide appropriate Personal Protective Equipment (PPE)

In contaminated environments, divers need to be provided with appropriate PPE to protect them against chemical, biological, nuclear or other hazardous waste. PPE needs also to be provided to people remaining on the vessel. Decontamination procedures for all persons and equipment should be included in the dive plan.

Manage the risks

All activities have an element of risk. You must manage the risks associated with diving work.

Assess the risks

There must be a written risk assessment conducted by a competent person.

Supervise the dive

You must appoint at least 1 competent person to supervise the diving work and other functions at all times.

Have a dive plan

The dive supervisor needs to prepare a dive plan before and instruct workers about it before the work takes place. The dive plan must be followed and must contain the following:

- the method of conducting the diving work
- the tasks and duties of each person who is diving
- the diving equipment being used
- the breathing gases required
- the dive procedures
- the dive times, bottom times and decompression profiles
- any hazards relating to the dive and the steps taken to control the risks
- emergency procedures.

Maintain a dive safety log

A dive safety log must be kept for each dive a worker conducts. The log must include:

- name of the worker who is diving
- name/s of anyone else who is diving (whether or not they are employed by you)
- name of the supervisor

- date and location of the dive
- time each diver enters and leaves the water
- maximum depth of the dive
- any incident, difficulty, discomfort or injury that occurs during the dive
- the dive time if using a dive computer
- the repetitive dive group and the bottom time/dive time if using a dive table
- a repetitive factor (if youget it) and the surface interval
- the return of each diver, as soon as practicable after the dive
- the diver's and the supervisor's signature (or unique identifier if the log is electronic) to record everyone's safe return
- the names of people on the vessel, both before and after the dive (if you are diving from a boat).

If you use EANx or mixed gas, you must also supply:

- the oxygen and/or nitrogen content
- the maximum operating depth
- the minimum operating depth of the bottom mix (for mixed gas only).

Keep records

After a dive takes place, there are certain records you must keep for legal reasons. These records must be kept for the minimum following duration:

- Certificate of medical fitness – 1 year after the work is conducted.
- Evidence of competencies – 1 year after the work is conducted.
- Written risk assessment – 28 days after the work is completed.
- Dive plan - for the duration of the work, or for 2 years if a notifiable incident occurs.
- Dive safety log – 1 year after the last entry.

All these records must be made available to us and any worker upon request.

Have appropriate first aid provisions

All workers must be able to access a first aid kit and facilities.

First aid kits must cater to the type of incidents that may occur and the number of participants. Consider the equipment required to treat:

- near drowning
- lacerations
- cardiac events
- unconsciousness
- sea sickness
- stings
- sunburn.

Workers who aren't diving should be trained to use the first aid equipment and be available at the surface of the dive site. Oxygen equipment should be suitable for both breathing and non-breathing persons.

Automated external defibrillators

Complete an assessment to decide if an automated external defibrillator (AED) and trained operator should be available. While not mandatory, oxygen or an AED should be considered

as part of your first aid and emergency planning. If they aren't, PCBUs must justify why.

First aiders must be provided with appropriate training for the level of risk identified at the workplace. Training should include how to use an AED and HLTAID015 - provide advanced resuscitation and oxygen therapy.

For more information about first aid requirements and AED's, see First Aid Code of Practice PDF, 391.59 KB.

Training for diving work

General diving work

Anyone carrying out general diving work must have relevant competencies as specified in AS/NZS 2815:2013 – Training and certification of occupational divers.

Both incidental diving or limited scientific diving workers, need to have completed a certain number of hours of relevant diving experience.

Minor works and surveys

Workers who do hands-on work such as anode replacement, minor works and hull cleaning) also need competencies as specified in:

- ADADIV405A – Work safely as a member of a dive team undertaking diving operations under controlled conditions
- ADAHYP401A – Work safely in hyperbaric operations
- BSBWHS211 – Contribute to health and safety of self and others
- BSBWHS201 – for some Registered Training Organisations (RTOs)

The exemption that was granted under the Work Health and Safety Regulation 2017 between 17 July 2020 to 31 December 2022 is no longer in force.

Instructors and tour operators

Workers who are paid for services to recreational dive customers, such as dive tour operators, dive leaders and instructors also need competencies as specified in:

- BSBWHS211 – Contribute to health and safety of self and others
- BSBWHS201 – for some Registered Training Organisations (RTOs)

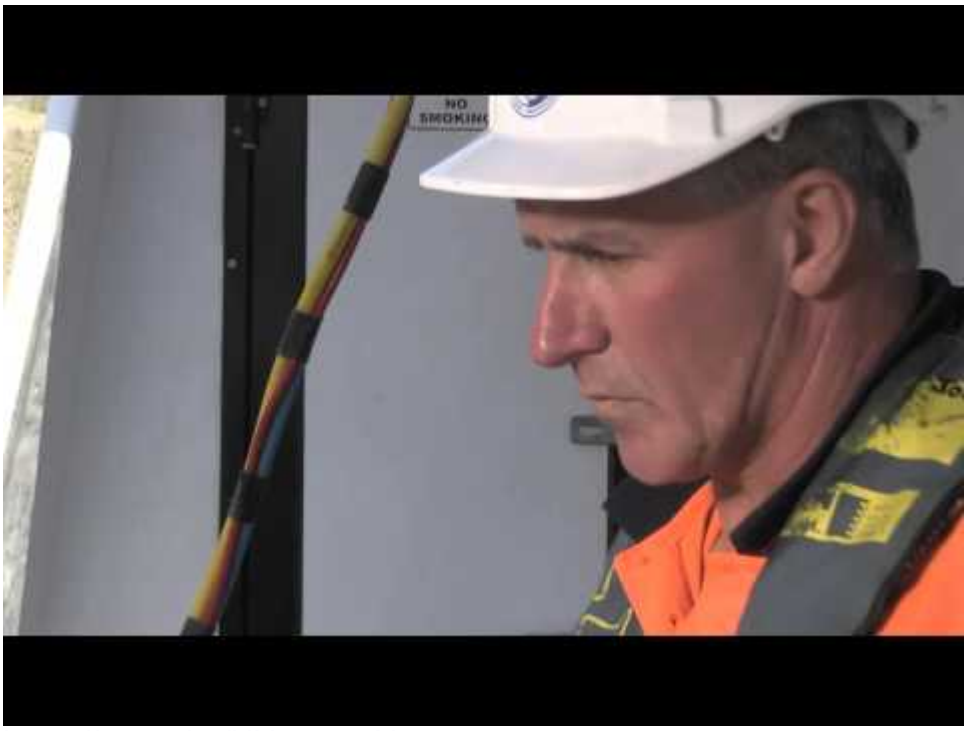
High risk diving work

Workers who do high risk diving work must have the competencies as specified in:

- AS/NZS 2299.1 – Occupational diving operations, Part 1: Standard operational practice

Safety procedures for standby divers

Safety procedures for standby divers are outlined in this video



https://youtu.be/NlJ4mo9uX5s

More information

Tools and resources

- IDC Guide – The Physics of Diving
- SPUMS – Diving Doctor List

Technical help and guidance

- NSW Government: Work Health and Safety Regulation 2017: Part 4.8 Diving work and clause 5 Definitions
- Work Health and Safety Act 2011: Section 44 Requirements for prescribed qualifications or experience
- SAI Global: AS/NZS 2815.2:2013: Training and certification of occupational divers
- SAI Global: AS/NZS 2299.1:2015: Occupational diving operations - Standard operational practice
- ADAS: Code of Practice: ADAS Training and Assessment
- Safe Work Australia: Diving
- WHS QLD: Occupational diving work - Code of Practice 2005
- SafeWork NSW: Employer and business obligations
- SafeWork NSW: Safety Alert: Gas cylinders manufactured from aluminium alloy 6351-T6
- General Diving Work – Qualifications – Exemption 002/20 (pg 3620)
- More information on the changes to the Regulation