

Health and Safety Programs

Working on or near water

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What tasks or occupations involve working on or near water?

Tasks or occupations that involve working on or near water include:

- Commercial fishing
- Other on-ship/boat occupations (e.g., tours, etc.)
- Lifeguarding
- Construction (e.g., working on bridges, docks, decks, piers, etc.)
- Water sampling
- Enforcement / Rescue (e.g., search and rescue, coastguard, police, etc.)

This document is not specific to lifeguarding, enforcement, rescue, or diving operations. These occupations require specific training and qualifications beyond the general information provided here.

Are there occupational health and safety laws about protection against drowning?

Yes. In Canada, all fourteen jurisdictions have legislation about protection against drowning. All jurisdictions require the use of a life jacket or Personal Floatation Device (PFD) when there is the risk of drowning and there are no other measures in place which would prevent a fall in the water (e.g., other fall prevention or protection measures are in places such as guardrails, full body harness and lifeline, safety net, etc.). In some cases, the legislation may specify the use of a life jacket (a device capable of self-righting a person) or address specific situations. Always check with your [jurisdiction](#) for exact requirements.

Note that Transport Canada also specifies certain types of devices when aboard specific watercraft or when near water. For example, [Transport Canada](#) specifies types of life jackets or PFDs for different vessels, including what devices are required for Safety of Life at Sea (SOLAS), all other vessels, small vessels, recreational use/personal watercraft, and human-powered vessels (including stand-up paddleboards).

Please see the OSH Answers on [protection against drowning](#) for more information about life jackets and personal floatation devices.

In addition to protection against drowning, legislation may also address rescue equipment and rescue procedures, including:

Training – may include:

- an appropriate number of workers are to be trained for rescue operations
- workers are designated to perform the rescue tasks
- workers are informed about appropriate rescue procedures
- workers are trained in rescue procedures and use of rescue equipment
- workers may need to be trained in cardiopulmonary resuscitation (CPR) and first aid

Rescue equipment – may include:

- lifebuoy
- boat hook
- lifeline
- life jackets, including one for each of the rescue crew
- audible alarm
- adequate boat that is available for a safe and timely rescue

Where there is a strong current, a line fitted with buoys or similar floating objects that can support a person should be extended across the water downstream from the work location and securely anchored at each end.

What do the occupational health and safety laws say about emergency preparedness when working on or above water?

A written emergency response plan appropriate to potential emergencies should include when work is done on or above water. It is specifically required in some jurisdictions when working on or over water (e.g., British Columbia and Newfoundland). Quebec requires a description of the work performed, characteristics of the body of water, weather conditions, as well as a transportation plan and rescue measures to be gathered before the start of the work.

Again, always check with your [jurisdiction](#) for exact requirements.

When developing an emergency preparedness plan, look at the following:

- location of the work
- nature and type of work being done
- type of body of water (e.g., are there tides? currents? how deep? water temperature? etc.)
- measures in place to protect workers from falling
- number of workers
- work schedules
- weather
- type of work platforms, boats, etc. present
- transporting workers and equipment
- procedure to be followed when a worker has fallen in the water (e.g., type of boat, equipment needed, first aid procedures, etc.)

Why is safety important when working on or near water?

Working on or near water has many concerns including, but not limited to:

- [Protection against drowning](#)
- Cold-water shock and immersion

- Working outdoors:
 - Weather (including [lightning](#))
 - Cold Environments: [Control Measures](#), [Health Effects and First Aid](#), [Overview](#)
 - Hot Environments: [Health Effects and First Aid](#), [Control Measures](#), [Overview](#)
 - [Humidex Rating and Work](#)
 - [Ultraviolet radiation](#) (sunlight)
 - [Working Safely around Stinging Insects](#)
 - Diseases transmitted by insect bites, including [Lyme Disease](#) and [West Nile Virus](#)
 - [Slips, trips, falls](#), particularly when wading or walking in the water
 - Working at heights, including [body belts](#), [harnesses](#) and [lanyards](#)
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What happens during cold-water shock and immersion?

Many oceans, lakes and rivers in Canada have cold water. While the timing may vary depending on the actual temperature of the water, the body mass of the person, and the clothing they are wearing, the body goes through several stages during cold water immersion.

It is reflexive for the body to gasp for air when the body is first immersed in cold water. If you are underwater, water will be breathed in.

Hyperventilation follows, which is breathing at 6 to 10 times the normal rate. This phase lasts about 1 minute. It is very important to concentrate on steady breathing and not panic. Wearing a personal floatation device will help hold your mouth above water.

Within 10 to 30 minutes, the cold will make it harder to use your arms and legs. The body will lose the use of fingers, arms, and legs. This change will affect your ability to grab a rescue line or to pull yourself out of the water. If you can, begin self-rescue steps as soon as possible. If not, focus on breathing while you wait for rescue.

Within about 30 to 60 minutes, unconsciousness due to hypothermia may happen. Bodies lose heat much faster when in the water. Try to get as much of your body out of the water as possible. Climb on the overturned boat or other floating object. If you are with others, huddle together by interlocking your arms and legs, and press your bodies together for warmth. If you are alone, float on your back and try to hug your legs close to your body. These positions are known as the heat escape lessening position.

After the rescue, it is important to monitor the person's health, handle the person gently, and begin re-warming slowly. Get medical attention.

The American Conference of Governmental Industrial Hygienists (ACGIH) has developed cold-water immersion time limits for reaching a core temperature of 35.5°C when immersed in water at various depths and water temperatures.

Water Temperature (°C)	Water Temperature (°F)	Knee Deep (Hours)	Waist Deep (Hours)	Chest Deep (Hours)
(10-12)	(50-54)	12.8	1.9	1.3
(13-15)	(55-59)	15.6	7.5	2.2
(16-18)	(60-64)	22.2	10.2	7.9
(18-21)	(65-69)	33	13.8	10.5

Source: 2024 TLVs and BEIs Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices. Original source: US Department of the Army

What ways to reduce the risks of working on or near water?

Steps must be taken to eliminate or reduce the risk of falling into the water. Solutions include using guardrails, fall arrest equipment, and safety nets. This equipment must all be installed and used according to your jurisdiction’s requirements and to the manufacturer’s instructions.

To increase the survival of workers that may enter the water, use life jackets or PFDs, and thermal protection (submersion suits) where necessary.

Have equipment immediately available to help a person exit the water. Life-saving equipment must also be provided and maintained. Any throwing lines used with lifebuoys or similar equipment must be of suitable size and length and made of buoyant material. Other examples include fixed ladders may be provided along the dock. In British Columbia, for example, these ladders must be no more than 30 metres (100 feet) apart, extend from the top of the dock to at least 1 metre (3.3 feet) below the lowest water level, be free of barnacles and marine growth, and have their location identified with high visibility paint on the curb or bull.

What are additional tips when working around water?

When working on a deck, dock or similar surface:

- Make sure all walking areas and work surfaces are clean, dry, clear of debris, etc.
- Keep all gear secure when not in use.
- Keep stairs, ladders, doorways, ramps, walkways, and gangways clear.

- Safely secure ramps or gangways when loading and offloading.
- Check for items such as loose boards or nails that stick out on docks and repair as necessary.
- Wear footwear with slip-resistant soles.
- Use a non-skid deck compound where possible.
- Paint the edges of the dock, etc. and any trip hazards in a contrasting colour.
- Where mobile equipment is used, a curb or bull rail should be installed on the open sides of each float, dock, wharf, pier or similar areas.

When working beside a boat:

- Make sure the fenders are in place on the docking side. Check the condition of the fenders regularly.
- Do not allow any part of your body to be between the dock and the boat.

When walking near or in water:

- Take care when walking into the water. Rocks can be very slippery.
- Be aware of your surroundings, including changing water levels and floating debris.
- Use the buddy system in challenging situations.
- Avoid currents and areas of deep water.

What should be done when transporting workers by boat?

All boats and vessels must follow [Transport Canada's](#) marine transportation requirements. Requirements cover many areas, including lifejackets, paddles, anchors, bailer/pump, fire extinguisher, signalling device, watertight flashlight or distress signal, buoyant heaving lines, etc.

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