

Safety Guide for Construction Work over / near Water



Occupational Safety and Health Branch
Labour Department



Marine Industrial Safety Section
Marine Department

This guide is prepared jointly by
the Occupational Safety and Health Branch of the Labour Department and
the Marine Industrial Safety Section of the Marine Department

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Addresses and telephone numbers of the offices can be found in the website of the Labour Department at <http://www.labour.gov.hk/eng/tele/osh.htm> or the Marine Department at http://www.mardep.gov.hk/en/pub_services/ocean/miss.html.

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Introduction

This guide provides safety measures for construction work carried out over/near water (including on, adjacent to or over water or on vessels in Hong Kong Waters) where potential hazards to workmen exist. First of all, employers should conduct a comprehensive risk assessment for this kind of construction work, and take into account the hazards identified and evaluated during the assessment to develop a safe system of work. Employers are also responsible for providing their workers with the necessary safety information, instruction, training and supervision. In addition, safety measures on the use of lifting appliances/mobile plant, lifejackets/buoyancy aids for work over/near water should be intensified throughout the construction period. To prevent any person from falling from a height, suitable safety measures should also be developed and implemented. Besides, effective rescue and emergency arrangements should be well established for work over/near water so as to safeguard the workers in an emergency situation.

Land-based construction work over/near water is mainly regulated by the Factories and Industrial Undertakings Ordinance (Cap. 59), the Occupational Safety and Health Ordinance (Cap. 509) and their subsidiary regulations administered by the Labour Department. Sea-based construction work carried out on vessels is regulated primarily by the Shipping and Port Control Ordinance (Cap. 313), Merchant Shipping (Local Vessels) Ordinance (Cap. 548) and their subsidiary regulations administered by the Marine Department. Employers may refer to legislation and publications issued by these two departments for developing and implementing a safe system of work and adequate measures to safeguard employees engaged in work over/near water.



Safe System of Work

- ▲ A task-specific risk assessment for work over/near water should be conducted and reviewed periodically by a competent person.
- ▲ All potential hazard(s) involved in the work over/near water, e.g. drowning, overturning of mobile plant/equipment into water and collapse in confined spaces, should be identified, listed out and addressed.
- ▲ A safety plan for work over/near water, including but not limited to the following, should be established:
 - Planning of work;
 - Formulation of method statements/safe working procedures;
 - Emergency preparedness, e.g. contingency plans, rescue/evacuation arrangements and drills.
- ▲ The safety plan for work over/near water should be regularly reviewed and, where necessary, revised as appropriate.
- ▲ Safe work methods should be properly implemented according to the safety plan.
- ▲ Implementation of safe work methods should be adequately monitored and supervised.
- ▲ Necessary safety information, instruction and training should be provided to workers.



Safe Use of Lifting Appliances/Mobile Plant

- ▲ Lifting appliances and lifting gear should be tested and examined by a competent examiner before use and at regular intervals and inspected by a competent person at regular intervals.
- ▲ Lifting appliances/mobile plant should be operated by qualified operators.
- ▲ Operators of lifting appliances/mobile plant on vessels should be authorised by the master or owner of the vessel/ the site management before carrying out any work.
- ▲ Operation of lifting appliances/mobile plant should be supervised by works supervisors.
- ▲ Lifting appliances on vessels should be fixed and securely anchored.



- ▲ Lifting appliances/mobile plant should be kept away from dangerous locations such as openings, edges close to water.





Safe Use of Lifting Appliances/Mobile Plant

- ▲ The operation zone should be clearly demarcated and properly fenced off.
- ▲ A signaller should be provided if the view of the operator is obstructed.



- ▲ No lifting appliance/mobile plant or lifting gear should be loaded beyond its safe working load.
- ▲ Lifting appliances/mobile plant and lifting gear should be properly maintained in safe working order.



Safe Use of Lifting Appliances/Mobile Plant

Remarks:

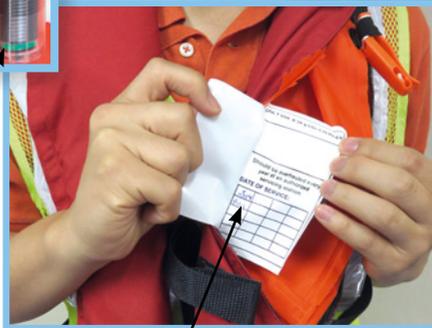
Examples of mobile plant: bulldozer, loader, excavator, truck, lorry, compactor, dumper, grader, scraper.

For the definition of a competent person and competent examiner, refer to the relevant Codes of Practice issued by the Labour Department and the Marine Department.



Safe Use of Lifejackets/Buoyancy Aids

- ▲ Lifejackets/buoyancy aids should be provided to and worn by workers with risk of falling into water.
- ▲ Lifejackets/buoyancy aids should conform to BS EN ISO 12402-1, 2, 3 or 4, or other equivalent international standards according to working conditions.
- ▲ Lifejackets should be thoroughly checked by the user before each use.



*Efficient state:
Green*

Maintenance record



Safe Use of Lifejackets/Buoyancy Aids

- ▲ A lifebuoy with sufficient lifeline (not less than 30 metres) should be provided and the locations of the lifebuoys should be at less than 50-metre intervals along the edges of places where work is being carried out overside or in an exposed position on vessels where there is a reasonably foreseeable risk of falling or being washed overboard. To avoid any delays to rescue operations, lifebuoys should not be tightly tied to posts.





Safe Use of Lifejackets/Buoyancy Aids

- ▲ The lifejacket/buoyancy aid should preferably be provided with a whistle and/or a self-activating light (for night work) in order to aid locating the wearer and facilitating rescue.
- ▲ The lifejackets/buoyancy aids should be inspected and checked periodically by a competent person.



- ▲ The lifejackets/buoyancy aids should be properly maintained in a good serviceable condition according to the manufacturer's instructions.
- ▲ All inflatable lifejackets should be serviced by an authorised agent at least once a year.

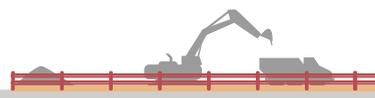


Working at Height

- ▲ Suitable guard-rails and toe-boards should be installed at edges. Openings should be properly covered where persons are liable to fall from height, to land surfaces or into water.
- ▲ Suitable working platforms, with suitable guard-rails and toe-boards, should be provided for work at height. Safe means of access and egress should be provided for the working platform.



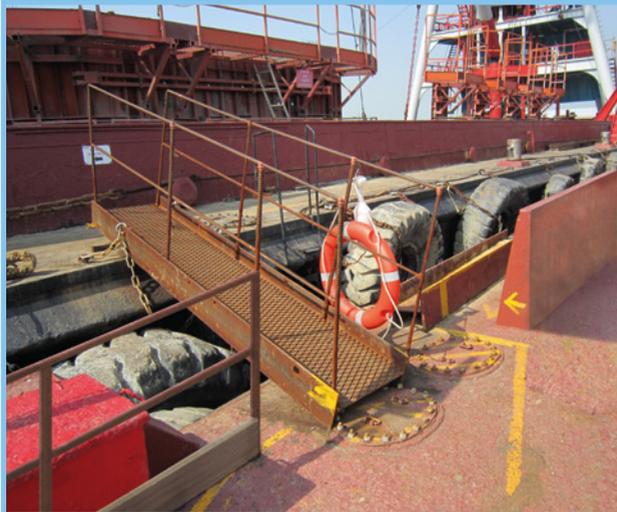
- ▲ Safety harnesses with continuous and effective anchorage system should be provided when it is impracticable to provide a suitable working platform, access and egress and safe place of work.





Safe Means of Access and Egress

- ▲ Safe means of access and egress should be provided between a vessel and
 - (i) another vessel;
 - (ii) the shore;
 - (iii) a workplace on land/over water.



- ▲ Efficient lighting should be provided at all means of access and egress.
- ▲ Means of access and egress and their approaches should be free from obstruction and, as far as practicable, kept clear of any substance likely to cause a slip, trip or fall.



Safe Means of Access and Egress

- ▲ A lifebuoy with a buoyant safety line of 30 metres long should be available for use, and the locations of lifebuoys should be at less than 50-metre intervals along the edges of places, in vicinity for access aboard vessels. To avoid any delays to rescue operations, lifebuoys should not be tightly tied to posts.



- ▲ Ramps of adequate strength should be provided for the access of vehicles from land to vessels, or vice versa.



- ▲ Ramps for vehicles should not be used as access gangways for people unless a suitable separation is provided.



Rescue and Emergency Arrangements

- ▲ Rescue/evacuation teams (including first aiders) of suitable capacity should be organised to deal with emergency situations.
- ▲ The occurrence of an emergency situation should be informed immediately to the rescue team for immediate launching of appropriate rescue procedures.
- ▲ Serious emergency situations should be reported immediately to the public emergency authorities, i.e. Fire Services Department and/or Police, for assistance.
- ▲ Sufficient rescue/evacuation boat(s) should be provided and kept ready for immediate use in case of emergency.





Rescue and Emergency Arrangements

- ▲ Rescue facilities, including sufficient stretcher(s), portable resuscitation equipment and first aid facilities, should be provided and kept readily accessible for emergency use.



- ▲ Emergency procedures, including rescue/evacuation procedures, should be formulated and reviewed regularly in the safety plan for, but not limited to, adverse weather (typhoon, thunderstorm, heavy rainstorm, etc.), fire, injuries of workers, etc. An emergency contact list (internal and external) should be displayed on board.



Rescue and Emergency Arrangements

- ▲ An effective communication system should be established between front-line workers and supervisory staff in case of emergencies, including:
 - Provision of sufficient communication equipment;
 - Formulation of relevant procedures;
 - Provision of necessary information to supervisors/workers concerned.





Rescue and Emergency Arrangements

- ▲ Necessary information on adverse weather should be made available from the Hong Kong Observatory (including any specific data/forecast to be prescribed with due regard to the peculiar site location/situation) or other reliable sources and timely/effectively communicated to personnel/workers likely affected by the weather.
- ▲ Shelters, vessels for evacuation from adverse weather, etc, should be provided in the vicinity of workplaces over/near water.



- ▲ Evacuation procedures should be timely launched with due regard to impending adverse weather.



Safety Training

- ▲ Workers should undergo Mandatory Basic Safety Training for land-based construction work and/or Shipboard Cargo Handling Basic Training for marine construction work at sea.
- ▲ Job specific safety training and regular refresher training should be provided to workers to enhance/maintain their safety awareness of potential hazards associated with work over water/near water/on vessels, including those during inclement weather.
- ▲ Specific safety training should be provided to workers on the use and checking procedures of lifejackets, and rescue arrangements for persons who fell into water.



- ▲ Supervisors/workers should be trained on emergency and evacuation procedures, including the conduct of regular drills, in respect of work over water/near water/on vessels.



Safety Training

- ▲ Specific safety training should be provided to all members of the rescue/emergency team in connection with rescue procedures and the use of rescue equipment.
- ▲ Essential safety information and contingency arrangements should be provided (such as by issuing portable safety cards) to workers engaged in work over water/near water/on vessels.

Safety hints for work over/near water

1. Provide safe means of access and egress at the workplaces.
2. Install guard-rails and toe-boards at edges of the work-at-height locations.
3. Wear fall protection device if guard-rails cannot be installed at edges of the work-at-height locations.
4. Wear lifejacket and check it thoroughly before each use.
5. Wear safety helmet while at work.
6. Wear suitable safety goggles for gas welding and flame cutting work, concrete breaking work, etc.
7. Ensure proper segregation between pedestrians and moving plant/vehicles and use designated walkway.
8. Report to your supervisor immediately if any deficiency of the above safety measures is observed.

Emergency preparedness

1. Contact the emergency contact persons below immediately to launch the rescue and support arrangement in the event of emergency situation.
2. Evacuate to the safe place as soon as possible and contact the emergency contact persons below for the evacuation arrangement in the event of adverse weather.

Emergency Contact A	Mr. XXX / Ms. XXX	XXXX-XXXX
Emergency Contact B	Mr. XXX / Ms. XXX	XXXX-XXXX
Rescue Boat A	Mr. XXX / Ms. XXX	XXXX-XXXX
Rescue Boat B	Mr. XXX / Ms. XXX	XXXX-XXXX
First Aider 1	Mr. XXX / Ms. XXX	XXXX-XXXX
First Aider 2	Mr. XXX / Ms. XXX	XXXX-XXXX





Enquiries

If you have any enquiries about this guide or other matters on occupational safety and health, please contact the Occupational Safety and Health Branch of the Labour Department and the Marine Industrial Safety Section of the Marine Department through:

Occupational Safety and Health Branch of the Labour Department

Telephone : 2559 2297 (auto-recording after office hours)

Fax : 2915 1410

E-mail : enquiry@labour.gov.hk

Marine Industrial Safety Section of the Marine Department

Telephone : 2852 4477

Fax : 2543 7309

E-mail : mdenquiry@mardep.gov.hk

Information on the services offered by the Labour Department/Marine Department and on major Labour/Marine legislation can also be found by visiting the Home Page at: <http://www.labour.gov.hk> or <http://www.mardep.gov.hk>

Complaints:

If you have any complaints about unsafe construction work over/near water, please call the Labour Department's occupational safety and health complaint hotline at 2542 2172 or the Marine Department's hotline at 2542 3711. All complaints will be treated in the strictest confidence.



