This information sheet provides guidance on some of the main hazards encountered in port and dock operations. It will be of assistance to employers when conducting a risk assessment of their or their employees’ work activities in ports and docks. It will also be of interest to anyone who visits ports and docks during the course of their work.

When conducting the risk assessment, the following non-exhaustive list of hazards should be considered and appropriate control measures put in place.

**Falls from Height**

Falls from height can occur whilst carrying out trimming, sheeting and container lashing, securing loads, accessing ships, working on board a ship or working on heavy machinery.

- Edge protection must be in place on all open edges where there is a risk of falling from height.
- Falls through openings in holds or from cargo must be prevented.
- All access or lashing cages must be appropriately protected with guard rails and toe boards and have robust gates or doors. Documented instructions for their safe use should be available.

- Wherever possible, avoid the need for people to climb onto vehicles. If people cannot work from the ground, appropriate safe access must be provided for sheeting etc.
- Appropriate ship to shore access must be provided and should comply with relevant Marine Notices (see www.dttas.ie/maritime).
- Appropriate measures and safe systems of work must be in place to prevent falls from height and to ensure compliance with Part 4 of the Safety, Health and Welfare at Work (General Application) Regulations 2007, as amended.

**Falling Objects**

Whilst carrying out loading and unloading operations and stacking and stowing goods there is a risk of falling objects. Items may be loose and incorrectly or poorly slung or stacked. Fittings and fixtures used during lashing operations may be dropped. Loads or objects may collapse or fall having become unstable during transport or having been poorly loaded.
• Safe systems of work must be in place to ensure that pre-slung and loose loads can be lifted safely.

• All securing equipment, such as twistlocks and lashing bars, must be adequately inspected and maintained.

• Loads must be appropriately secured especially during movement around the dock.

• Marked safe areas should be provided for lorry drivers during loading and unloading operations, especially in container terminals.

• Marked safe areas should be provided for customs officials to carry out examination and sealing of containers.

• Good ship to shore liaison and cooperation is required for the loading and unloading of solid and rigid bulk cargoes.

• Appropriate documented safe systems of work must be in place for the stacking of full and empty containers. Empty containers should not be stacked within 7 metres of occupied buildings.

• Stacks adjacent to buildings and perimeter fences should be stepped back.

• If linking containers together, a safe system of work must be in place to enable the attachments that link the containers to be put in position, and removed, safely.

### Lifting Equipment

• All lifting equipment must be inspected and tested and records of such tests kept in accordance with the Safety, Health and Welfare at Work (General Application) Regulations 2007, as amended.

• A register of lifting equipment and lifting accessories must be maintained.

• Appropriate procedures must be in place to verify that a ship’s lifting equipment, has been inspected and tested, in accordance with legal requirements, prior to allowing workers to use it, including cargo lifts.

• All lifting equipment must be capable of lifting the required load.

### Fatigue

Dock operations can be prone to unexpected events and delays over which there may be little control. Fatigue can develop slowly and will not always be obvious. It can increase the risk of accidents through poor perception or physical exhaustion.

• Measures must be in place to ensure that rest periods are appropriate.

• Managers, shift workers and night workers must be educated about the need for proper sleep and the dangers of fatigue.

• When organising the workload and job, account must be taken of the Organisation of Working Time Act 1997 and the Night Work and Shift Work Regulations (Part 6, Chapter 3 of the Safety, Health and Welfare at Work (General Application) Regulations 2007, as amended. Note: some exemptions apply.

### Fire/Electrocution

• All electrical equipment and installations must be designed, constructed, installed, maintained, protected and used so as to prevent danger.

• All such equipment and installations, including distribution boards, sockets and connections, must be protected from the ingress of moisture and from foreseeable impacts.

• Any equipment used in wet, dirty, flammable or explosive environments must be suitable for use in such conditions.
• Loading and unloading activities must not be carried out in the vicinity of overhead electric power lines.
• Flammable liquids and gases must be properly transported and stored.

**Hazardous or Asphyxiate Substances**

Workers loading and unloading solid bulk cargoes may be exposed to dust or respiratory sensitizers that can cause asthma. Cargoes may be flammable, toxic, poisonous or corrosive. Some cargoes, for example grain, may have been fumigated. Some solid bulk cargoes in the hold may not be hazardous themselves, for example fishmeal or bark, but may produce gases due to decomposition or bacterial action. Vehicle exhaust emissions in the ship’s hold may also give rise to hazardous fumes.

• Closed systems should be used, where appropriate, to prevent the escape of dust.
• The correct grab should be chosen for the cargo being handled to reduce the amount of dust generated. Grabs must be properly maintained and used in accordance with safe systems of work in order to reduce dust generation.

• All dust control equipment must be properly maintained and cleaned in accordance with the manufacturer’s recommendations.
• If the work involves exposure to dirt or dust, then showers must be provided.

• Vehicle exhaust emissions in a ship’s hold should be assessed.
• Safe systems of work must be followed before entry into the cargo hold.
• Entry into a confined space should not be permitted unless the space has been adequately ventilated and a competent person has declared it safe to enter.
• Prior to any operation taking place in a confined space on a ship, the employer on shore and the ship’s master must consult and cooperate together.

**Mooring Hazards**

Mooring can be a hazardous activity as there is a risk of a person getting caught in a line or a winch. The lines can be very heavy and awkward, particularly if they are wet, and may break and snap back.

All workers carrying out mooring operations should be specifically trained. They should:

• Wear appropriate personal protective equipment.
• Stand clear of lines being thrown but be ready to pick them up as soon as they have landed.
• Only enter the snap back zone if it is necessary to carry out a specific task.
• Never put their feet in bights or eyes of mooring lines or step over a mooring line under tension.
Moving Vehicles and Equipment
An appropriate traffic management system must be in place and will aid both safety and operational control of the port.

- As far as reasonably practicable, vehicles and pedestrians must be segregated.
- Marked and signposted walkways should be in place.
- Signage should be in place advising drivers of the side of the road on which they should drive.
- Members of the public, private vehicles, taxis and delivery vehicles should be restricted from accessing operational areas.

- Appropriate control and supervision of vehicle and pedestrian movements should be in place, especially on vessel ramps.
- Documented safe systems of work should be in place for:
  o Personnel who have to enter areas where vehicles and plant are operating, such as container stacking areas or bulk storage warehouses.
  o People carrying out maintenance work in operational areas, for example tyre repairers or reefer engineers.
  o Trailer coupling and uncoupling activities.
- All port users should be aware of the traffic plan and the safe systems of work. Where traffic routes have to change for operational reasons, sufficient notice of the change should be provided.

- All operational areas and access routes to them should be provided with suitable and sufficient lighting to ensure safe working during hours of darkness or at other times of reduced visibility.
- All vehicle drivers and plant operators (including terminal tractor drivers, straddle carriers and forklift truck and side loader operators) should be carefully selected and must have appropriate instruction, information and training for the vehicles and plant that they operate.
- Only authorised drivers should operate vehicles or plant. Adequate supervision is required to ensure that drivers are competent and that safety standards do not deteriorate.
- All vehicles and plant must be adequately maintained in accordance with the manufacturer’s recommendations.
- Appropriate high visibility clothing should be worn by all workers.

Musculoskeletal Disorders (MSDs)
MSDs are caused mainly by manual handling, frequent bending and twisting and heavy physical work. The risk of MSDs can increase with the pace of work, low job satisfaction, high job demands and job stress. Injuries due to manual handling account for one in every three accidents reported to the Health and Safety Authority (HSA) on an annual basis.

- Mechanical handling equipment should be used to handle all loads where possible.
• Manual handling of loads, including manual manoeuvring of lifting gear, attachments and slung loads, should be avoided where possible.

• Where monotonous repetitive tasks occur, proper breaks at regular intervals should be built into the work pattern.

• Ergonomic assessments should be carried out at the planning stage of any work process.

• Good equipment design and good seating, along with proper adjustment, can assist in reducing MSDs.

**Night Work**

Night work/shift work can contribute to or produce negative biological effects (heart and stomach disorders), psychosocial effects (fatigue, increased accidents, stress) and individual effects (disrupted family life, isolation, stress).

• Night and shift workers must be considered in all appropriate risk assessments.

• The safety of employees going to and coming from work, particularly when tired and at unsociable hours, must be considered; employees should be advised on the use of carpools, public transport, rested drivers and taxis.

• Install bright lights, where practicable, in work areas (to signal to the body to be alert and awake).

**Noise**

Equipment and engines may produce noise which is augmented when they are operated in a ship’s hold or a warehouse. As a rule of thumb you may be at risk if you have to shout to be clearly heard by someone 2 metres away, if your ears are still ringing after leaving the workplace or if there are noises due to impacts such as those caused by hammering.

• Noisy areas need to be identified and a risk assessment carried out.

• Appropriate measures must be in place to ensure compliance with Part 5, Chapter 1 of the Safety, Health and Welfare at Work (General Application) Regulations 2007, as amended.

**Slips and Trips**

The majority of dock accidents reported to the HSA are due to slips, trips and falls on the same level.

• The employer or person in control to any extent of the place of work must ensure safe access and egress.

• Appropriate pedestrian routes must be provided to the waterside and to ships.

• All parts of the port should be kept in a clean, orderly condition. Poor housekeeping and badly stowed ropes, cables and other equipment can all be a hazard.

• All access and emergency routes and operational areas must be kept free of objects and materials that may result in accident and injury.
• All operational areas and access routes to them should be provided with suitable and sufficient lighting to ensure safe working during hours of darkness or at other times of reduced visibility. Adequate lighting should be available on board ships.
• Appropriate arrangements should be in place to deal with spillages and for gritting wet, icy, oily or greasy surfaces on ships and on shore.
• Appropriate life-saving appliances such as lifebuoys should be provided. Appliances should be conspicuous, readily accessible and instructions for their use should be provided or displayed.

**Tidal and Environmental Hazards**

The weather can have an adverse effect on port and dock operations and can reduce visibility. Cold and wet weather can reduce concentration and make manual work more difficult. Hot weather may result in heat exhaustion, sunburn or sunstroke. Wind, ice and fog can all increase the risk of slips, trips and falls. Tidal movements can affect access and egress to the ships, cause difficulties during loading operations and result in collisions between dockside equipment and a ship.

• Arrangements should be made to obtain timely warnings of adverse weather.
• Suitable personal protective clothing (PPE) should be provided.
• Adequate rest breaks should be provided.
• Adequate welfare facilities should be provided with hot and cold running water and facilities to allow for drying clothes and taking meals/hot drinks.

**Relevant Health and Safety Legislation**

Docks (Safety, Health and Welfare) Regulations 1960. These regulations have been in part revoked.
Safety, Health and Welfare at Work (General Application) Regulations 2007, as amended.

**Further Information**

Further information on occupational safety and health is available on the HSA website at [www.hsa.ie](http://www.hsa.ie) or by calling the Workplace Contact Unit at 1890 289 389 or email wcu@hsa.ie.