

Tutorial Materials for Mandatory Basic Safety Training Course (Container Handling)



This set of tutorial materials is prepared by the
Occupational Safety and Health Branch
Labour Department

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This set of tutorial materials aims to assist the employees of the container handling industry to prepare for the mandatory basic safety training courses and enables them to grasp the key knowledge in occupational safety. However, the reader should note that tutorial materials written in simple and plain language is not applicable for explaining the relevant legislation.

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Press Releases

<https://www.labour.gov.hk/eng/major/content.php>

Work Safety Alert

https://www.labour.gov.hk/eng/news/work_safety_alert.htm

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1. General Safety



No.	Key Learning Points
1.	The purpose of the Occupational Safety and Health Ordinance is to ensure the safety and health of employees when they are at work. Employers should ensure the safety and health of the employees during work in their workplaces. Employees should take care for the health and safety of himself and others during work at the workplace.
2.	According to the "General Duties" provisions of the Factories and Industrial Undertakings Ordinance, proprietors and employees are responsible for safety and health at work. Proprietors shall take care for the safety and health of employees. Proprietors shall provide employees with safe plant and system of work, necessary information, instruction, training and supervision, and provide and maintain safe access to and egress from a workplace.
3.	According to the Factories and Industrial Undertakings Ordinance, the responsibility of workers is to use safety equipment and facilities properly.
4.	Employers shall provide adequate supply of drinking water to their employees.
5.	The main pathways for dangerous substances to enter a worker's body are swallowing, body contact, and inhalation.
6.	Studying the label content outside a container is the proper way for identifying the name, classification, risks and precautions of the chemical in the container.
7.	The compulsory information of a label of chemical includes the chemical name, classification, particular risks, and safety precautions but not the chemical formula. Labelling the cargoes with essential information for the chemical product, including its name, properties and safety precautions is an essential safety

	measure to handle cargoes of chemical products.
8.	According to the Factories and Industrial Undertakings (Dangerous Substances) Regulations, the responsibilities of employees are to understand properties and safety precautions of chemicals, properly use protective clothing and equipment provided by employers, and refrain from smoking and eating at workplaces where chemicals are being used or stored.
9.	According to the Factories and Industrial Undertakings (Dangerous Substances) Regulations, the following terms are used to classify the properties of chemicals: explosive, oxidising, flammable, toxic, harmful, corrosive and irritant.
10.	According to the Factories and Industrial Undertakings (Protection of Eyes) Regulations, workers engaged in welding work shall wear approved eye protectors.
11.	The booklet "Hints on First Aid" issued by the Labour Department and the substances required statutorily as listed on the booklet shall be placed in a first aid box at container handling workplace. The wording "First Aid" shall be clearly marked on the first aid box.
12.	Workers working engaged in container handling activities shall undergo mandatory basic safety training and the training courses shall be recognised by Commissioner for Labour.
13.	The main purpose of accident investigation is to prevent occurrence of similar accidents.
14.	Whether any personal injury has been caused or not, an employer shall report every dangerous occurrence happened in a workplace to the Labour Department within 24 hours.

2. Safety on Cargo and Container Handling



No.	Key Learning Points
1.	The majority of fatal accidents related to container handling is fall of persons or objects. Workers run down by heavy vehicles (e.g. Front Loader) is also a common accident. The common reason for workers knocked down by heavy vehicles in containing handling areas is that pedestrians and vehicles are not properly segregated.
2.	The proper methods for stacking containers are as follows: stacking height of containers should be kept as low as possible, the ends of rows of stacked containers should be stepped, stacks of empty containers should be clustered at all times, and containers should be stacked on firm and level ground.
3.	In the event of inclement weather or strong wind, loading and unloading of containers should be suspended and containers should be secured by lashing
4.	Stack containers in clusters to minimise the influence of strong wind on the containers.
5.	To unload containers onto vehicles, containers should be supported by their corner fittings only.
6.	Workers entering or leaving a container terminal, container stacking area, container yard or warehouse should use a designated walkway for pedestrians.
7.	Workers are absolutely not allowed at any time to work under goods being lifted or lowered.
8.	Information of the centre of gravity of goods should be checked to ensure the goods are lifted steadily and securely.
9.	To ensure work safety, stacking cones should be used to secure

	containers in position.
10.	If the view of a crane operator is obstructed, he should cooperate with a signaller and follows the instructions given by the signaller.
11.	An operator should remove the car key before leaving a fork-lift truck.

3. Work above Ground



No.	Key Learning Points
1.	Working at height means a worker is working at a position where he is liable to fall from height at a vertical distance 2 metres or more. Proper working platforms are the first consideration by a proprietor to prevent accidents of falling from height at work. Scaffolds and working platforms should be erected by trained scaffolding workmen.
2.	Common reasons causing a worker on the top of a container to fall down include: workers trying to avoid the swinging hook of a crane, container with workers working on shook violently as collided by another container being lifted, and workers losing balance while climbing down to the ground.
3.	The main purpose of guardrails of a working platform is to prevent fall of workers.
4.	Floor edges and openings shall be installed with secure fencing. If any dangerous places that have not been installed with fencing or the fencing has been damaged, fencing should be reinstalled or repaired immediately. If this is beyond your capability, you should inform your supervisor at once.
5.	Only when provision of safe working platform or safe access and egress is impracticable, safety nets and safety belts should be used as an alternative and the safety belt should be anchored to a secure anchorage point or an independent lifeline.
6.	Ladders should be restricted for access/egress purpose only and should not be used for work. Only when all the other measures (including working platforms and light-duty working platforms) are not feasible and a permit-to-work for use of ladders has been issued

	by a competent person with a thorough risk assessment conducted and all necessary safety measures related to use of ladders taken, ladders can be used for work-above-ground at height less than 2 metres.
7.	A ladder for access/egress purpose should be of good construction, sound material and adequate strength. Examine the ladder before using it and inspect it at regular intervals. Place the ladder on a level and firm footing. Ladder's upper or lower end shall be securely fixed or secured by another worker. Place the ladder at an appropriate angle. For straight ladder, the ladder should be placed on a 1:4 ratio (75 ⁰) of setback distance to height. Ensure that the ladder has a sufficient length. The upper end of the ladder should be at least 1 metre above the landing against which the ladder leans. If a portable ladder is insufficient in length for use, replace it with a ladder of sufficient length.
8.	When climbing up or down a ladder, the user should avoid carrying heavy objects. The user must face the ladder and maintain a three-point contact with the ladder. Do not use metal ladder if there is electrical installation nearby.
9.	A full body harness (also called Parachute safety belt) should be used with an independent lifeline by a worker working at height. Before using a safety belt, the following should be considered: any defects on the safety belt, any suitable anchorage, independent lifeline and fall arresting device, and whether relevant standard met or not. The most appropriate method for anchoring the safety belt is to anchor the safety belt at a level higher than the user's waist.
10.	When somebody has fallen from height, supervisor should be notified immediately and the first aider should be assigned to look after the injured person for medical treatment.

4. Use of Personal Protective Equipment



No.	Key Learning Points
1.	Use of personal protective equipment is the last resort when controlling the accident at source is ineffective.
2.	Personal protective equipment should be provided by employers. Workers should follow instructions to use personal protective equipment and properly store the equipment issued by their employers. When the equipment is damaged, it should be replaced immediately.
3.	The following should be considered when using personal protective equipment: whether the personal protective equipment provides proper protection, whether it fits for the work, and whether it is comfortable to the user. If the personal protective equipment is not fit for the user or damaged, it should be replaced immediately. If more than one types of personal protective equipment have to be worn, it is required to ensure that they are compatible.
4.	Employees should know why and when personal protective equipment is used, its maintenance or replacement schedule and limitations.
5.	Worker should wear a safety helmet on a container yard. Safety helmet is for protection of worker's head from falling material. Safety marking, such as European Standard number, is the basic requirement for a safety helmet. A safety helmet should be equipped with a Y-type chin-strap. The tightness of chin strap should be adjusted to be as comfortable as possible and fit the trainees to avoid falling off.
6.	The followings are mal-practices of using safety helmets: drill holes on helmet, use it for pounding and place the grass hat inside the helmet for shading. Moreover, the harness of the helmet should keep clean and make sure that it fits well. The safety helmet should also keep sufficient buffer distance between the top of the head and the

	shell of the helmet.
7.	Steel toe caps, steel soles and slip-proof are essential features for safety shoes. Wearing safety shoes can prevent the sole from being pierced by sharp objects, prevent the user from sliding on a slippery floor and prevent the user's toes from being crushed by falling objects.
8.	Aprons, safety shoes, rubber gloves and face shields can provide suitable protection to worker handling chemicals. Apart from using the above personal protective equipment, provision of the essential information of a chemical label for chemicals is the important safety measures.
9.	Worker engaged in concrete breaking or using abrasive wheels should wear suitable eye protectors. Flying dust and splashing of chemicals would cause eye injury. Suitable respirator and eye protectors should be adopted for lifting dusty goods such as bulk cement.
10.	Worker engaged in grinding work should use dust respirator for protection of respiratory system.
11.	The tightness between a respirator and the wearer's face is an important factor for proper use of respirators. After using the respirator, clean and wipe it thoroughly.
12.	Use approved ear protectors when entering an ear protection zone as prolonged exposure to high levels of noise causes hearing damage.
13.	An ear protector should not be used unless its model and brand have been approved by the Labour Department. Ear muffs have the best sound insulating performance.
14.	Workers should not wear cotton gloves to operate machine with revolving parts to avoid injury to hands due to entangling of the cotton gloves with the revolving parts.
15.	The types of protective clothing: general purpose protective clothing; disposable overalls; specialized protective clothing such as cold resistant clothing; chemical or radiation protective clothing; high visibility clothing, puncture-resistance aprons and lifejacket used for land-based work carried out adjacent to water. Workers working in a container handling workplace should wear reflective vests.
16.	Life-saving appliances for rescue of drowning persons should be

equipped at a wharf.

5. Fire Safety



No.	Key Learning Points
1.	In fires, the majority of people die due to inhalation of hazardous smoke.
2.	Burning requires fuel, heat and oxygen. Oxygen is the most common supporter of combustion, and also main component of air.
3.	Fire could be prevented when isolating the oxygen, isolating the fuel or cooling down the heat source.
4.	All means of escape of the workplace should be kept free from obstruction, and all exit doors should be unlocked can facilitate escape in case of a fire.
5.	Illuminated 'EXIT' signs over all exits and clear direction to them should be provided in the workplace.
6.	<p>The fire preventive measures include:</p> <ul style="list-style-type: none"> ✧ Make sure that the assembly points after fire evacuation are known; ✧ Keep workplace clear and tidy all the time; ✧ Be careful when using machine and equipment which will generate sparks or heat; ✧ Smoke doors should be closed at all times; ✧ No smoking and naked flame at any storage area of flammable or explosive materials; ✧ Keep all means of escape in a safe condition and free from obstruction; and ✧ The fire service installations should be routinely tested.
7.	Flammable substances should be stored at a metal cabinet. Rags, after cleaning flammable liquid, should be placed in a metal container with a lid. The proper place for storing large quantities of flammable substances is a dangerous goods store. In addition, fire is most likely caused by spraying of flammable liquid.

8.	Burning of paper, textiles, timber, plastic, rubbish and miscellaneous articles are classified as the first category of fire. Water type fire extinguisher, dry powder type fire extinguisher or foam type fire extinguisher should be used to put out the fire.
9.	Burning of flammable liquids, solvents, oil, grease are classified as the second category of fire. Foam type fire extinguisher, dry powder type fire extinguisher or carbon dioxide type fire extinguisher should be used to put out the fire.
10.	Burning of electrical appliances, motors, and electrical switches are classified as the third category of fire. Carbon dioxide type or dry powder type fire extinguisher should be used to put out the fire. Water or foam type fire extinguisher is not suitable for putting out such fire.
11.	Using a carbon dioxide type fire extinguisher at a confined or poorly ventilated area may cause oxygen deficiency.
12.	When using a dry powder fire extinguisher, one should note that the dry powder discharged may reduce visibility and cause disorientation.
13.	A worker smoking at a 'No Smoking Area' is an unsafe behaviour and flammable substances nearby may be ignited
14.	Before going into a container loaded with plastic raw material, the properties of the plastic raw material should be verified first. The container should securely rest on the ground with doors fully open. Do not smoke when going inside.

6. Electricity Safety



No.	Key Learning Points
1.	Electrocution is due to the serious damage to the heart function by electric current.
2.	While a worker is using a portable electrical tool, he should follow the operation rules set by the manufacturer, check the tool before use, and use appropriate plug for connecting the power so as to ensure the tool is in proper function.
3.	Improper repairing of electrical appliances will result in: explosion, burnt, and electric shock. Only competent electrician is allowed to repair electrical appliance. During electrical insulation or repairing work, the electricity source should be safely isolated.
4.	Conducting electric arc welding work at a humid environment would lead to electricity accident. The cable connections of electric arc welding equipment exposed and not well protected would lead to electricity accident.
5.	The following measures will prevent electrical accidents: never apply load on an electric wire, do not use damaged or unauthorized modified electric tools, regularly inspect and maintain electrical tools, always use double-insulated electrical tools, and adopt “permit to work” system and ensure the live parts of the electric tools are well protected.
6.	Workers should avoid using electrical appliances if their clothing is wet as it would cause electric shock. An electrical appliance used in a humid workplace should be water-proof. In a humid workplace, a portable electrical appliance user should use insulating gloves and stand on an insulated mat to reduce the risk of getting electric shock.
7.	The marking “回” on portable electrical appliances means that the appliances are double-insulated which can avoid current leakage. Such electrical appliances can be used without earthing. Hand tool

	without double insulation should be grounded to prevent electric shock accident.
8.	Water-proof electric wires connection method should be adopted for outdoor work.

7. Safety of Confined Spaces Operations



No.	Key Learning Points
1.	A “confined space” is defined to mean any place in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk, and includes any chamber, tank, vat, pit, well, sewer, tunnel, pipe, flue, boiler, pressure receiver, hatch, caisson, shaft or silo in which such risk arises. The specified risks include a fire or explosion, an increase in body temperature, lack of oxygen, an increase in the level of liquid and entrapment by a free flowing solid.
2.	All workers entering a confined space for working shall be certified workers.
3.	Prior to commencement of work in a confined space, the proprietor shall appoint a competent person specified by the Factories and Industrial Undertakings (Confined Spaces) Regulation to conduct a risk assessment for the confined space. The risk assessment report and the related certificate issued should be displayed in a conspicuous place at the entrance of the confined space.
4.	For working in a confined space, the proprietor shall ensure that all safety precautions, including starting the forced ventilation (e.g. Blower) have been properly implemented before the work starts. The fresh air duct of forced ventilation should be extended to all locations of the workplace to avoid the accumulating of exhaust gases inside the confined space.
5.	Before entering a confined space, it should be tested by appropriate gases detection instrument to ascertain whether there is sufficient oxygen in the confined space and that there is no toxic gas or explosive (flammable) gas. All persons are prohibited to enter or stay in a confined space in case testing of gases has not been

	performed.
6.	Before a certified worker enters a confined space, a work permit (a certificate issued by the proprietor) should be obtained first. Workers should leave a confined space at once when the period of validity stated in the work permit expires.
7.	A person shall be stationed outside a confined space to keep communication with the workers inside when work is being carried out in the confined space.
8.	Only the workers who have received proper safety training and worn an approved breathing apparatus are allowed to enter a confined space to carry out a rescue operation.

8. Manual Handling Operations



No.	Key Learning Points
1.	Frequent or prolonged repetitive movements, jerky motions are improper / risky manual handling operations. Twisting the upper body trunk to lift heavy goods is an inappropriate manual handling operation.
2.	Strain and sprain are the most common injury suffered by workers engaged in lifting heavy goods. Waist is most likely to be injured if a worker lifts goods improperly (e.g. lifting of heavy objects by bending the waist).
3.	Sudden quick movement during manual lifting should be avoided.
4.	As far as possible, use mechanical tool for lifting goods is a correct measure in manual handling operation.
5.	The proper method of lifting heavy object is to hold the object close to the body, keep the back straight and stand up slowly with both legs. Seek assistance from someone in lifting a load if necessary.
6.	When transporting goods, one should put on gloves as far as possible to protect your hands from any cuts, scratch or puncture, and wear safety boots or shoes to prevent injury to toes by heavy falling objects.
7.	Doing some warm-up exercises before lifting and transporting goods can render the muscle and cardiopulmonary system more adaptable to the change so as to reduce the chance of getting injury.
8.	A manual handling operation means a load is moved or supported by a person's hands or arms, or by some other of bodily effort. It includes lifting, lowering, pushing, pulling and carrying the load.

9. Machinery Safety



No.	Key Learning Points
1.	Common causes for overturning of heavy transporting equipment (such as front loader and reach stacker) are: collision with other heavy vehicles, uneven ground surface, and uneven distribution of the weight of a container.
2.	Weekly inspection of lifting appliances (such as jib crane and tower crane) should be carried out by competent person.
3.	Lifting appliances (such as jib crane and tower crane) and lifting gear (such as slings and ring) should be used only after test and thorough examination by a registered professional engineer and an approved report stating it is in safe condition.
4.	For lifting appliances (such as jib crane and tower crane), it should be examined by a registered professional engineer with the issuance of approved form in every 12 months.
5.	For lifting gear (such as sling), it should be thoroughly examined by a competent examiner. Besides, it should be marked with the safe working load. The weight of the load must not exceed the safe working load of the lifting gear.
6.	A crane with a maximum safe working load of more than 1 tonne shall be equipped with an automatic safe load indicator.
7.	Front loaders or reach stackers should be installed with suitable and properly maintained reversing video devices, to assist the operator in viewing the situation at the rear of the plant when it is about to reverse and reversing. The reversing video devices should: (i) be installed at proper positions to cover all blind spots caused by the rear body of the lift trucks; (ii) automatically and instantly convey clear images to the operator; and (iii) effectively enable the operator to view the overall situation at the rear and its vicinity.
8.	Crane operators shall be at least 18 years old, and have undergone

	relevant training and hold valid certificates.
9.	The operator of a fork-lift truck shall attain 18 years old, has undergone relevant training and hold valid certificate. Common unsafe practices of operating a fork-lift truck include driving a loaded truck down a slope with the truck facing downwards, carrying of persons by the fork, and keeping the fork at high position during parking.
10.	When a fork-lift truck is travelling, the fork of the truck should be descended to the lower safe position.
11.	If a loaded fork-lift truck is travelling down a slope, it should travel backwards.
12.	Accidents of machine operations are usually caused by failure of machine guarding. The function of installing guarding to protect the revolving parts of machinery is to avoid the limbs being caught by the machinery.
13.	For repairing the revolving parts of machinery, do not conduct cleaning work on a machine which is in motion and avoid contact of revolving parts with the limbs or personal belongings to prevent from being caught by the machinery. For machinery repairing, worker should not dismantle the protective guard while testing a machine for ease of adjustment.
14.	Worker should not wear cotton gloves while operating or working on machines with revolving parts where there is a possibility that the glove being caught by rapidly moving parts.
15.	Safety measures for using abrasive wheels include providing and keeping safety guard in position, affixing a notice which specify the highest permissible speed and the safety rules, selecting the appropriate size and type of abrasive wheel for the work, and mounting of abrasive wheel by a competent person appointed by the proprietor in writing.

10. Welding Safety



No.	Key Learning Points
1.	Under the Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation, workers engaged in gas welding and flame cutting shall attain 18 years old, have undergone training and hold valid certificate.
2.	Safety measures for gas welding work include : <ul style="list-style-type: none"> ✧ gas cylinders for welding work should be equipped with flashback arresters; ✧ gas cylinders should be kept in an upright position and stored in a cool and well-ventilated place; and ✧ if there are other people, a screen should be used for segregating the sparks to avoid injuring others.
3.	In oxy-acetylene welding, the common colour of oxygen cylinders is black and that of acetylene cylinders is maroon.
4.	The potential hazards of gas welding include fires and explosions resulted from the release of flammable fuel gases or oxygen into the atmosphere, and illness due to inhalation of fumes or gases formed during the process, such as metal fume fever, bronchial and pulmonary irritation.
5.	Fire extinguishers should place within reach in workplace when conducting gas welding.
6.	Common hazards of electric arc welding include electric shock, arc radiation and inhalation of harmful gases.
7.	Chronic fibrosis of an electric arc welder's lung tissue is caused by prolonged inhalation of metal dust which exceeds the prescribed concentration.
8.	The ultraviolet generated in electric arc welding would cause eyes injury.
9.	Eye shields, gloves and insulated shoes should be worn by electric

	arc welders.
10.	Workplaces for electric arc welding work should be: <ul style="list-style-type: none">✧ installed with sufficient lighting;✧ equipped with appropriate fire extinguishers;✧ kept well-ventilated; and✧ no storage of flammable substances.

11. Other Safety Matters



No.	Key Learning Points
1.	Many accidents are caused by unsafe working environment, workers' unsafe behaviour, and insufficient training and information. A worker should be responsible for his/her own unsafe acts. He/She should take care of his/her and co-workers' safety.
2.	The consequences of industrial accidents are death, injury, and occupational disease.
3.	The Government, employers and workers are responsible for preventing industrial accidents.
4.	Maintaining good housekeeping at a workplace can reduce the occurrence of accidents, provide a safe and effective working environment, and reduce the economic loss caused by accidents.
5.	Placing materials in a passageway without planning is a factor causing accidents.
6.	It is the duty of the proprietor to provide safety training. Training can enhance workers' safety awareness so as to reduce accidents.
7.	A comprehensive first aid and emergency contingency plan can minimize the risks caused by accidents, minimize the loss caused by accidents, and render the scene and the environment under control as quick as possible.
8.	In order to effectively control the hazards, a contingency plan including the procedures should be devised and drilled regularly so as to allow workers to familiarise with the procedures and contents of contingency plan, fully understand their responsibilities in contingency plan, and identify the deficiencies during the drill so as to make improvements and amendments.
9.	Workers working in the container handling industry shall undergo mandatory basic safety training. The validity of a mandatory basic safety training certificate for the container handling industry is 3

	years.
10.	The main purpose of implementing the mandatory basic safety training in the container handling industry is to enhance workers' safety awareness and prevent accidents.
11.	The effective measures to prevent traffic incidents in a workplace include installation of traffic signs, workers wearing reflective vests and designating pedestrian walkways to segregate the pedestrians from the moving vehicles.
12.	A workplace near the shore should be provided with lifebuoys to prevent worker from drowning.
13.	The purpose of permit to work system is to ensure a workplace is safe for work.
14.	At least one first aider should be provided for a container handling workplace with the number of workers ranged from 30 to less than 100.
15.	In a hot and humid environment, workers would most likely get heat stroke. Hence, they should avoid working under direct sunlight and temporary sunshade should be set up whenever possible. All or most of the work should be rescheduled to cooler periods in the daytime, such as early morning, and cooler places, such as covered or shaded area. Cool drinking water should be provided at all times during work. Workers should drink water regularly to avoid dehydration. Light-coloured and loose-fitting clothing should be worn to minimise heat absorption, enhance heat dissipation and sweat evaporation. Early heat stroke symptoms include headache, thirst and nausea.
16.	An employer should report to the Labour Department after an accident causing the death of an employee at a workplace within 24 hours.