

Approval Conditions for

Operating

Mandatory Safety Training Courses

Part II – Module 1(b)

Course Design and Specifications

For

- (A) Mandatory Basic Safety Training Course (Container Handling)**
- (B) Mandatory Basic Safety Training Revalidation Course (Container Handling)**

Version Control Record

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Inquiry

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(Container Handling)*

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(Container Handling)*

1. Overview

- 1.1 The terms and abbreviations adopted in this module follow those defined in Part I. This module is Part II – 1(b) of the AC which covers 2 “MBST” (Container Handling) courses, i.e. full course and revalidation course. This module should be read together with Part I of this AC.
- 1.2 Section 6BA of the Factories and Industrial Undertakings Ordinance, Cap 59, requires that every employed person carrying out container handling activities should have successfully completed the relevant safety training course, i.e. MBST (Container Handling) Course, and should have been issued with a relevant certificate. In this regard, the CL is empowered by section 6BA(2) of the Ordinance to recognise the following safety training courses:
- (A) Mandatory Basic Safety Training Course (Container Handling) (“full course”); and
 - (B) Mandatory Basic Safety Training Revalidation Course (Container Handling) (“revalidation course”).
- 1.3 Procedures for application for course recognition are stipulated in the GN. Applicant who wishes to run full course or revalidation course should submit an application to the CL for course recognition.
- 1.4 Unless stated otherwise, requirements stated in this module are applicable to both full course and revalidation course.
- 1.5 TCP should ensure that the course materials used should comply with the requirements of this AC.
- 1.6 The objective of the full course is to provide basic safety training to employed persons carrying out container handling activities in order to enhance their safety awareness and therefore to prevent work accidents and occupational diseases. The trainees will be issued with a MBST (Container Handling) certificate upon successful completion

of the course.

- 1.7 Revalidation course aims to provide refresher training to holder of MBST (Container Handling) certificate so as to refresh and update what was learnt in the past MBST (Container Handling) course attended. Upon successful completion of the course, the trainee will be issued a new certificate.
- 1.8 At the end of either MBST course, the trainees should be able to:
 - 1.8.1 Describe the basic legal requirements prescribed under relevant safety legislation applicable to container handling yards or depots;
 - 1.8.2 Understand the basic principles of work safety;
 - 1.8.3 Comprehend the potential hazards of common work processes on container handling yards or depots and their preventive measures;
 - 1.8.4 Analyse the possible causes of, and means of preventing, accidents and diseases that are common on container handling yards or depots;
 - 1.8.5 Understand the basic principles of fire prevention;
 - 1.8.6 List the essential elements of emergency preparedness;
 - 1.8.7 Understand the importance of, and procedures for, reporting accidents and dangerous occurrences on container handling yards or depots;
 - 1.8.8 Grasp the types, purposes, correct selection procedures and the proper use of personal protective equipment commonly required on container handling yards or depots; and
 - 1.8.9 Demonstrate the necessary safety attitude to safeguard themselves and other workers.

2. Admission criteria

- 2.1 Full course is run for trainee who does not possess a MBST (Container Handling) certificate or possesses a MBST (Container Handling) certificate which has expired for more than 3 months.

- 2.2 A TCP should ensure that applicant to be admitted to a revalidation course should, at the time of application, be holding a MBST (Container Handling) certificate which either will expire within 6 months or has expired for not more than 3 months.

3. Qualifications of trainer

- 3.1 A TCP should ensure that its trainer should at least possess one of the qualifications from 1 to 3 stipulated in **Annex 1**.

4. Trainees to trainer ratio

- 4.1 A TCP should ensure that the maximum ratio of trainees to trainer is 30 to 1 and it is the same for theory session and hands-on session.

5. Class size

- 5.1 A TCP should ensure that the maximum size of a class is 30 trainees and it is the same for theory session and hands-on session.

6. Course duration

- 6.1 A TCP should ensure that the minimum course duration of full course should be 7 hours (break between half-day sessions or lunch time are not included) and it should include a hands-on session of about 1 hour on the practice of using safety harness, an examination session of 30 minutes and a total of not more than 30 minutes recess time.
- 6.2 A TCP should ensure that the minimum course duration of

revalidation course should be 3.5 hours and it should include a hands-on session of not less than 30 minutes on the practice of using safety harness, an examination session of 30 minutes and a total of not more than 15 minutes recess time.

7. Attendance

- 7.1 A TCP should ensure that any trainee who is absent from the class for more than 15 minutes for any half-day sessions will be disqualified to attend the examination.

8. Lesson plan

- 8.1 A TCP should ensure that its full course and revalidation course should be taught in accordance with the lesson plans stipulated at **Annex 2** and **Annex 3**, respectively.

9. Course contents

- 9.1 A TCP should ensure the course materials used should include all the topics and details stipulated at **Annex 4**. The TCP should also supplement additional materials in accordance with the needs of the trainees and the latest safety information.

10. Display, demonstration and practising

- 10.1 A TCP should provide suitable and sufficient equipment (such as safety helmet, safety shoes/boots, safety gloves, ear and eye protectors, breathing apparatus, portable fire extinguisher and etc.) for the purpose of display or demonstration. A set of safety harness with

lifeline and fall-arresting device should also be provided for each trainee for hands-on practice. The TCP should ensure that every trainee should safely complete the hands-on practice.

11. Examination

- 11.1 A TCP should ensure that every trainee attending the examination should meet the required attendance and the requirement of completing the hands-on practice.
- 11.2 A TCP should ensure that the examination papers used are issued and specified by LD.
- 11.3 A TCP should provide the answer sheet at **Annex 5** to the trainee for the examination.
- 11.4 A TCP should ensure that the invigilator and the trainee should sign on the answer sheet.
- 11.5 Time allowed for the examination is 30 minutes and the passing mark is 60%.

12. Validity period of certificate

- 12.1 A TCP should ensure that the validity period of MBST (Container Handling) certificate issued is 3 years.
- 12.2 For full course, validity period of the certificate should be counted from the date when the trainee successfully completes the course.
- 12.3 For revalidation course, validity of the certificate should be counted from the day—
 - 12.3.1 immediately after the expiry date of the current certificate if the revalidation course is successfully completed within 6

months prior to expiry of the current certificate, or

- 12.3.2 of completing the revalidation course if the revalidation course is successfully completed within 3 months after expiry of the current certificate.

13. Standard certificate format

- 13.1 A TCP should ensure that front side of the MBST (Container Handling) certificate should be designed with the required words, in the format as shown in **Figure 1** and according to the specifications below. The reverse side is left to the TCP to include other information as appropriate, which should be commensurate with the purpose of the certificate.

Figure 1: Required Words and Design Format of the Front Side of MBST (Container Handling) Certificate

貨櫃業安全訓練證明書
Container Handling Industry Safety Training Certificate
工廠及工業經營條例第 6BA(2)條
Section 6BA(2) of the Factories and Industrial Undertakings Ordinance

持證人姓名 Holder's Name
(中文) :
(English) :

編號 Reference No. :

完成課程日期 Date of Course Completion :
(日 / 月 / 年 / 年 / 年 / 年) (dd / mm / yyyy)

有效期限 Validity Period : 由 From 至 To 止
(日 / 月 / 年 / 年 / 年 / 年) (dd / mm / yyyy)

本證明書由 [某發證機構] 簽發
Issued by [provider of recognised training course]

此證明書須由持證人擁有及保存。
This certificate is owned and should be kept by the certificate holder.

(not to scale)

- 13.1.1 The certificate should be made of durable materials, either laminated or plastic, and in standard size of 85 mm x 55 mm;
- 13.1.2 A photograph (minimum size of not less than 20 mm x 25 mm) of the trainee should be incorporated into the certificate for easy identification;

- 13.1.3 For laminated card, the corner of the trainee's photo should be stamped with the TCP's company's chop;
- 13.1.4 For plastic card, the trainee's photo should be printed on the card;
- 13.1.5 Unless otherwise specified, information on the certificate should be printed in both Chinese and English;
- 13.1.6 The certificate should contain the following information:
 - The name of certificate, i.e. “貨櫃業安全訓練證明書” and “Container Handling Industry Safety Training Certificate”;
 - The empowering legislation, i.e. “工廠及工業經營條例第6BA(2)條” and “Section 6BA(2) of the Factories and Industrial Undertakings Ordinance”;
 - The Chinese and English name as printed on the Hong Kong Identity Card (or equivalent identity documents) of the certificate holder;
 - Reference number of the certificate (an “R” should be appended to the last digit of the reference number to denote that the certificate is issued for a revalidation course);
 - Date of Course Completion (in the format of DD/MM/YYYY);
 - Validity period with starting date and expiry date (in the format of DD/MM/YYYY);
 - Name of the certificate issuing course provider; and
 - The wordings of “此證明書須由持證人擁有及保存。” and “This certificate is owned and should be kept by the certificate holder.”

14. Training records

- 14.1 A TCP should submit the record of every certificate issued according to the required details stipulated in Table 1 as well as the name of the course.

Table 1 : Example of Training Records

HKID/ Passport No. (TRT1)	Name of trainee (TRT2)	Class Ref. (TRC1)	Name of Trainer (TRC2)	Date of Course completion (TRC3)	Certificate Effective Date (TRT3)	Certificate Expiry Date (TRT4)	Certificate Serial No. (TRT5)
A123456(1)	Chan Siu On	ABC1	HAU To-si	13/06/2011	13/06/2011	12/06/2014	W396000201R
A123457(2)	Chan Siu Chuen	ABC1	HAU To-si	13/06/2011	23/09/2011	22/09/2014	W396000202R
A123458(3)	Chan Siu Feng	ABC2	HAU To-si	18/06/2011	18/06/2011	17/06/2014	W396000203
A123459(4)	Chan Siu Lin	ABC2	HAU To-si	18/06/2011	18/06/2011	17/06/2014	W396000204

Annex 1

Qualifications of a Mandatory Basic Safety Training (Container Handling) Course Trainer

Qualifications			
1.	A Registered Safety Officer under the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations; or		
2.	A person possessing at least any one of the following qualifications and experience from (i) to (iv); or		
	Academic Qualifications	Experience	
i.	A recognised degree or post-graduate diploma in occupational safety and health, or equivalent.	A cumulative total of <u>not less than one year</u> of experience directly involving occupational safety and health related work.	or
ii.	A degree in Science or Engineering, or equivalent, and a recognised certificate, diploma or higher diploma in occupational safety and health.	A cumulative total of <u>not less than one year</u> of experience directly involving occupational safety and health related work.	or
iii.	A recognised certificate, diploma or higher diploma in occupational safety and health.	A cumulative total of <u>not less than two years</u> of experience directly involving occupational safety and health related work, <u>one year</u> of such experience must be obtained after the academic qualification on the left column.	or
iv.	A recognised certificate in construction safety.	A cumulative total of <u>not less than two years</u> of experience directly involving occupational safety and health related work, <u>one year</u> of such experience must be obtained after the academic qualification on the left column.	
3.	A person recognised by the CL as being competent to teach training course of MBST (Container Handling).		

Annex 2**Lesson Plan for Mandatory Basic Safety Training Course
(Container Handling)**

Section	Topic	Duration
1.	Course Description	15 minutes
2.	Overview of relevant Occupational Safety and Health Legislation: <ul style="list-style-type: none">• Occupational Safety and Health Ordinance• Factories and Industrial Undertakings Ordinance and its subsidiary regulations• Codes of Practice	1 hour
3.	General Concept of Work Safety	30 minutes
	Recess	15 minutes
4.	Potential Hazards in Various Operations and Activities on Container Handling Yards or Depots; and their Preventions	1 hour
5.	Emergency Preparedness	15 minutes
6.	Accidents and Dangerous Occurrences Reporting System and Procedures	15 minutes
Break half-day sessions or lunch		
7.	Possible causes of, and means of preventing, accidents and diseases that are common on container handling yards or depots	1 hour
8.	Fire Prevention Measures and Use of Fire Extinguisher	15 minutes
9.	Personal Protective Equipment	15 minutes
	Recess	15 minutes
10.	Practice on the safe use of safety harness with lifeline and fall-arresting device	1 hour
11.	Conclusion	15 minutes
12.	Examination	30 minutes
Total no. of hours		7 hours

Annex 3**Lesson Plan for Mandatory Basic Safety Training
Revalidation Course (Container Handling)**

Section	Course Content	Duration
1.	Course Description	15 minutes
2.	Overview of relevant Occupational Safety and Health Legislation and their recent changes: <ul style="list-style-type: none">• Occupational Safety and Health Ordinance• Factories and Industrial Undertakings Ordinance and its subsidiary regulations• Code of Practice	30 minutes
3.	General Concept of Work Safety	15 minutes
4.	Common Accidents and Occupational Diseases happened on Container handling yards or depots and Potential Hazards in Various Operations and Activities on Container handling yards or depots and their Preventions	30 minutes
	Recess	15 minutes
5.	Accidents and Dangerous Occurrences Reporting System and Procedures and Emergency Preparedness	15 minutes
6.	Fire Prevention Measures and Use of Fire Extinguisher	15 minutes
7.	Personal Protective Equipment, Practice on the safe use of safety harness with lifeline and fall-arresting device	30 minutes
8.	Conclusion	15 minutes
9.	Examination	30 minutes
Total no. of hours		3.5 hours

**Course Contents for Mandatory Basic Safety Training
(Container Handling)**

Mandatory Basic Safety Training Course
(Container Handling)
Course Contents

Section 6BA(2) of Factories and Industrial Undertakings Ordinance



Occupational Safety and Health Branch
Labour Department

**This Course Contents is prepared by
The Occupational Safety and Health Branch
Labour Department**

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1. Introduction

Under Section 6BA(2) of Factories and Industrial Undertakings Ordinance (“the Ordinance”), from 1 May 2001 onwards, a person shall receive safety training course recognised by the Commissioner for Labour (the Commissioner) and hold a valid certificate (generally known as Green Card) before he can be employed to carry out container handling work. And proprietors shall only employ persons who are issued with a valid certificate to carry out container handling work. The person shall carry the certificate with him while at work in the industrial undertaking and produce it upon demand by the proprietor or an occupational safety officer of the Labour Department.

The purpose of this course contents, prepared by the Occupational Safety and Health Branch of the Labour Department, is to provide teaching guidelines to the course providers who apply for conducting Mandatory Basic Safety Training Course (Container handling) or Mandatory Basic Safety Training Revalidation Course (Container handling). It is hoped that the course providers will have an idea of the contents that should be covered. Flexibility is allowed for individual TCPs to supplement their course contents according to their specific circumstances and needs of their trainees. They should also update their course materials from time to time so as to cope with the latest legislative, socio-economic or technological developments. Nevertheless, they are not required to submit their revised course materials to the CL for prior approval.

The objective of the mandatory basic safety training course is to enhance workers’ safety awareness and prevent work accidents. Upon successfully completing the Course and passing the test, the trainee should be issued with a certificate in a format to be specified by the Commissioner. At the end of either course, the trainees should be able to:

- Describe the basic legal requirements prescribed under relevant safety legislation applicable to container handling yards or depots;
- Understand the basic principles of work safety;
- Comprehend the potential hazards of common work processes on container handling yards or depots and their preventive measures;

- Analyse the possible causes of, and means of preventing, accidents and diseases that are common on container handling yards or depots;
- Understand the basic principles of fire prevention;
- List the essential elements of emergency preparedness;
- Understand the importance of, and procedures for, reporting accidents and dangerous occurrences on container handling yards or depots;
- Grasp the types, purposes, correct selection procedures and the proper use of personal protective equipment commonly required on container handling yards or depots; and
- Demonstrate the necessary safety attitude to safeguard themselves and other workers.

The Mandatory Basic Safety Training Course (Container handling) is a 7-hour course. The certificate shall be valid for 3 years.

The Mandatory Basic Safety Training Revalidation Course (Container handling) is a 3.5-hour course. The certificate shall be valid for 3 years.

2. Overview of Relevant Occupational Safety and Health Legislation applicable to Container Handling Yards or Depots

The main sets of safety and health legislation in Hong Kong SAR are:

- Occupational Safety and Health Ordinance (Hong Kong Law Chapter 509)
- Factories and Industrial Undertakings Ordinance (Hong Kong Law Chapter 59)

2.1 Occupational Safety and Health Ordinance

The Occupational Safety and Health Ordinance provides for the safety and health protection to employees in workplaces, both industrial and non-industrial. It is basically an enabling ordinance setting out requirements in general terms.

The Coverage

This ordinance covers almost all workplaces - places where employees work. In addition to factories, construction sites and catering establishments, other places, such as offices, laboratories, shopping arcades, educational institutions also come under the ambit of the law. However, there are a few exceptions, namely:

- an aircraft or vessel in a public place;
- the place occupied by the driver of a land transport vehicle when it is in a public place (but other employees working in the vehicle are covered);
- domestic premises at which only domestic servants are employed; and
- places where only self-employed persons work.

The Roles of the Duty holders

Under this ordinance, everyone has a role to play in creating a safe and healthy workplace.

(1) Employers should contribute to safety and health in their workplaces by:

- providing and maintaining plant and work systems that do not endanger safety or health;

- making arrangement for ensuring safety and health in connection with the use, handling, storage or transport of plant or substances;
- providing all necessary information, instruction, training, and supervision for ensuring safety and health;
- providing and maintaining safe access to and egress from the workplaces; and
- providing and maintaining a safe and healthy work environment.

(2) Occupiers of premises should take responsibility for ensuring that

- the premises;
- the means of access to and egress from the premises; and
- any plant or substance kept at the premises are safe and without risks to health to any person working on the premises, even if they do not directly employ that person on the premises.

(3) Employees should also contribute to safety and health in the workplaces by:

- taking care for the safety of himself and other persons;
- taking care for the safety and health of persons at the workplace; and
- using any equipment or following any system or work practices provided by their employers.

Enforcement of the Ordinance

The Commissioner for Labour is empowered to issue improvement notices and suspension notices against activity of workplace which may create an imminent hazard to the employees. Failure to comply with the notices constitutes an offence punishable by a fine of HK\$200,000 and HK\$500,000 respectively and imprisonment of up to 12 months.

2.2 Occupational Safety and Health Regulation

The Occupational Safety and Health Regulation, made under the above ordinance, sets down some basic requirements for accident prevention, fire precaution, workplace environment control, hygiene at workplaces, first aid, as well as what employers and employees are expected to do in manual handling operations. The main provisions of the Regulation are:

To prevent accidents by:

- ensuring that the plant is properly designed, constructed and maintained and that all dangerous parts are effectively guarded; and
- ensuring that all dangerous areas are securely fenced.

To prevent fire by:

- providing illuminated 'EXIT' signs over all exits and clear directions to them;
- keeping all means of escape in a safe condition and free from obstruction;
- making sure that all exit doors can easily be opened from inside the workplace or are unlocked; and
- providing suitable and adequate fire safety measures.

To provide a safe and healthy work environment by:

- keeping the workplace clean and ensuring that it is adequately lit and ventilated; and
- providing adequate drainage.

To ensure hygiene by:

- providing adequate lavatory and washing facilities, as well as adequate supply of drinking water.

To provide first aid by:

- keeping adequate first aid facilities on the premises and appointing designated employees to look after them.

To ensure safe manual handling operations by:

- assessing and reviewing risks to the safety and health of employees who undertake manual handling operations; and
- providing proper training and other necessary protective measures for employees who undertake manual handling operations

2.3 Factories and Industrial Undertakings Ordinance

The Factories and Industrial Undertakings Ordinance provides for the safety and health protection to workers in the industrial sector.

The Coverage

This ordinance applies to industrial undertakings, i.e. factories, construction sites, catering establishments, cargo and container handling undertakings, repair workshops and other industrial workplaces.

General Duties

This ordinance imposes general duties on proprietors and persons employed at industrial undertakings to ensure safety and health at work.

(1) Every **proprietor** should take care of the safety and health at work of all persons employed by him at an industrial undertaking by:

- providing and maintaining plant and work systems that do not endanger safety or health;
 - In those special cases where a permit to work system is needed, there should be a properly documented procedure. Everybody understands which jobs need a formal permit to work. Permits to Work should:
 - (a) Define the work to be done
 - (b) Say how to make the work area safe
 - (c) Identify any remaining hazards and the precautions to be taken
 - (d) Describe checks to be carried out before normal work can be resumed
 - (e) Name the person responsible for controlling the job

- Jobs likely to need a permit to work system include:
 - (a) Working in confined spaces
 - (b) Hot work on plant containing flammable dusts, liquids, gases or residues of these
 - (c) Cutting into pipework containing hazardous substances
 - (d) Work on electrical equipment
 - making arrangement for ensuring safety and health in connection with the use, handling, storage or transport of plant or substances;
 - providing all necessary information, instruction, training, and supervision for ensuring safety and health;
 - providing and maintaining safe access to and egress from the workplaces; and
 - providing and maintaining a safe and healthy work environment.
- (2) Every person employed at an industrial undertaking should also contribute to safety and health at work by:
- taking care for the safety and health of himself and other persons at the workplace; and
 - using any equipment or following any system or work practices provided by the proprietor.

Subsidiary Legislation

Under the Factories and Industrial Undertakings Ordinance, there are 30 sets of subsidiary regulations covering various aspects of hazardous work activities in factories, building and engineering construction sites, catering establishments, cargo and container handling undertakings and other industrial workplaces. The subsidiary regulations prescribe detailed safety and health standards on work situations, plant and machinery, processes and substances.

2.4 Factories and Industrial Undertakings Regulations

The Regulations specify workers employed to work underground shall be medically examined at regular intervals and the procedures for reporting accident and dangerous occurrence. The Regulations also define the

requirements of sanitary conveniences and accident prevention of notifiable workplace.

Effective and suitable provision shall be made for securing and maintaining by the circulation of fresh air in each workroom or the adequate ventilation of the room and for rendering harmless, so far as practicable, all fumes, dust and other impurities that may be injurious to health generated in the course of any process or work carried on in the workplace.

2.4.1 Factories and Industrial Undertakings (Cargo and Container Handling) Regulations

The proprietor shall provide the measures on safety of workers employed in industrial undertakings of loading, unloading or handling of cargo and goods at docks, quays or wharves as well as those employed in industrial undertakings of loading, unloading, handling, stacking, unstacking, storing or maintaining (including repairing) of freight containers. The Regulations also stipulate requirements on the provision of first aid facilities at docks, quays and wharves.

Every regular approach over a dock, quay or wharf shall be maintained safe for persons employed. This means that docks, quays and wharves shall be organised and maintained so that workers can easily move about in all areas in which they may have to work or to which they may have to gain access without being in danger of falling, being struck, being trapped, etc.

All working places on a dock, quay or wharf and all roads of access to them from highways shall be adequately lighted at all times. In this connection, efficient artificial lighting may have to be used to supplement inadequate natural lighting.

Electrical equipment and circuits shall be properly designed, constructed, installed, protected and maintained to prevent danger from contact and fire. Switching arrangements for electrical installations shall be so arranged that the power supply can be easily and quickly cut-off in the event of an accident or in the presence of potential danger. This means that switches, isolators, etc, shall be efficient and within easy reach from the corresponding electrical equipment, easy identifiable and easily operated.

Electrical equipment shall be suitable both for the purpose to which it is being applied and for the circumstances in which it is being used. For instance, flame-proof electrical equipment shall be used in places where there is an explosion risk; electrical equipment exposed to wet or corrosive conditions shall be either specially designed for the purpose or suitably protected, and so on. Care should be taken when using portable electrical equipment. In particular, portable or flexible electrical conductors shall be kept away from areas where there is constant movement of persons, machines, vehicles or cargo.

Portable lamps shall only be used when it is impracticable to provide permanent lighting. In hazardous situations, such as wet conditions, the voltage of portable lamps shall be kept as low as possible in order to avoid the danger of electric shock to the users.

2.4.2 Factories and Industrial Undertakings (Confined Spaces) Regulation

The proprietor shall appoint a competent person to carry out assessment of the working conditions in the confined space. Safety measures have to be taken before the work begins and when the work is being undertaken. Only certified worker is allowed to work in confined space.

2.4.3 Factories and Industrial Undertakings (Notification of Occupational Diseases) Regulations

To specify the notification procedures of cases of silicosis and other occupational diseases.

2.4.4 Factories and Industrial Undertakings (Woodworking Machinery) Regulations

To lay down standards of safety measures for woodworking machinery and impose duties on proprietors to protect persons operating the machinery. At the same time, the Regulations also place a legal obligation on persons employed to use the guards and safety devices provided.

2.4.5 Factories and Industrial Undertakings (Lifting Appliances & Lifting Gear) Regulations

The regulations define the meaning of lifting appliance, lifting gear and crane. It is mandatory for the owner to ensure that the lifting appliance and lifting gear shall be examined and inspected by competent examiner and competent person periodically. A certificate shall be obtained from the competent examiner in the approved form in which he has made a statement to the effect that the lifting appliance is in safe working order.

2.4.6 Factories and Industrial Undertakings (Abrasive Wheels) Regulations

Every abrasive wheel shall be mounted by a person who has been appointed in writing by the proprietor for that purpose.

2.4.7 Factories and Industrial Undertakings (Work in Compressed Air) Regulations

To regulate the medical examination of persons employed in compressed air, the safety of compressed air operation, compression procedure and decompression procedure.

2.4.8 Factories and Industrial Undertakings (Spraying of Flammable Liquids) Regulations

Source of ignition is not permitted within 6 metres from any spraying area. Electrical appliance likely to be exposed to flammable atmosphere shall be of such construction, design, installation and maintenance so as to prevent the ignition of the flammable atmosphere.

2.4.9 Factories and Industrial Undertakings (Cartridge-operated Fixing Tools) Regulations

Suitable protective equipment shall be provided and maintained in good condition for use by every operator.

2.4.10 Factories and Industrial Undertakings (Protection of Eyes) Regulations

The proprietor has the duty to provide approved eye protector for every worker engaged in any of the specified processes listed in the Schedule of the regulations.

2.4.11 Factories and Industrial Undertakings (Noise at Work) Regulation

The regulation stipulates the first, the second, and peak action levels and their corresponding safety actions to be taken by the proprietor. Apart from the use of approved ear protector, the proprietor has the duty to reduce, as far as reasonably practicable, the exposure of the employees.

2.4.12 Factories and Industrial Undertakings (Electricity) Regulations

It is the duty of the proprietor under these regulations to provide and maintain protective equipment to protect against electrical hazard.

2.4.13 Factories and Industrial Undertakings (Asbestos) Regulation

Under this regulation, the proprietor shall ensure that an adequate assessment to determine the nature and degree of exposure of asbestos has been made. He shall then set out the steps that may be taken to prevent the exposure or to reduce it to the lowest level reasonably practicable. He shall provide every workman who is liable to be exposed to asbestos with approved breathing respiratory protective equipment and suitable protective clothing.

2.4.14 Factories and Industrial Undertakings (Blasting by Abrasives) Special Regulations

The proprietor shall provide personal protective equipment to every person working on the process.

2.4.15 Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations

The proprietor of a construction site, shipyard, or container handling undertaking shall employ a full time safety officer where the total number of

persons employed is 100 or more. He shall on the other hand employ a safety supervisor if the employment size is 20 or more. The duties of the safety officer and supervisor are listed out in these regulations

2.4.16 Factories and Industrial Undertakings (Dangerous Substances) Regulation

To standardize risk symbols and labelling system of dangerous substances and impose duties on proprietors and workers to take all reasonable safety measures in specified industrial undertakings where listed substances are used.

2.4.17 Factories and Industrial Undertakings (Suspended Working Platforms) Regulations

The owner shall provide each person using the suspended working platform with a safety belt and independent lifeline or an anchorage with fittings to prevent serious injury in case of fall of person using it. Besides, the suspended working platform shall be inspected and examined by a competent person and a competent examiner respectively and periodically. Every person working on a suspended working platform shall hold a certificate after having undergone a recognised training provided by the manufacturer of the suspended working platform.

2.4.18 Factories and Industrial Undertakings (Loadshifting Machinery) Regulation

Loadshifting machines used in the industrial undertakings are operated by a person who shall attain 18 years old, has attended a relevant training course and holds a valid certificate. Fork-lift trucks used in industrial undertakings; bulldozers, loaders, excavators, trucks or lorries, compactors, dumpers, graders, locomotives, and scrapers used on construction site are within the ambit of the Regulation. However, the Regulation does not apply to the operator of a truck or lorry who holds a valid driving licence under the Road Traffic Ordinance (Cap. 374).

2.4.19 Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation

The proprietor has to provide recognised training for every gas welding and flame cutting worker.

2.4.20 Factories and Industrial Undertakings (Safety Management) Regulation

The proprietor and contractor covered by the Regulation shall implement a safety management system which consists of 14 elements. The proprietor and contractor are required to carry out safety audit or safety review as the case may be of their safety management system. A good safety management system should have a proper coordination, communication and supervision.

There should be effective liaison among all parties concerned. Only competent personnel for coordination and supervision should be selected to ensure effective communication at each stage of work.

Adequate documents including safety measures, should be made available to all management personnel and parties concerned in good times. On the basis of the documents, each person responsible for managing or controlling the work can then assess the risk involved and ensure the competence of his workforce.

The proprietor should ensure that all his management personnel including managers, engineers and foremen possess the necessary information about the works before the works start. Such information may include:-

- The workplace conditions
- The proprietor's requirements, including the programme of the activities
- The specification for materials, workmanship and plant
- Method statements for safe operation of all container handling work
- The list of contact persons for coordination in various trades

Sufficient number of supervisory staff should be arranged to be present at the workplace to exercise effective control over the activities. These staff should be suitably trained and experienced in the activities. Provision of adequate

supervision is to ensure the following:-

- The work is carried out as laid down in the action plan on safety and in the method statement
- The workmen follow the proprietor's safety rules and instructions

2.5 Code of Practice

The Code of Practice (hereinafter referred as the Code) is approved and issued by the Commissioner for Labour under Section 7A of the Factories and Industrial Undertakings Ordinance, Chapter 59 of the Laws of Hong Kong (hereinafter referred as the FIUO). It provides a practical guidance to proprietors of industrial undertakings and the employees for compliance with the requirements under the provisions of the Sections 6A and 6B of FIUO concerning the general duties of proprietor and employee. It is important to note that compliance with the Code does not of itself confer immunity from legal obligations.

The Code has a special legal status. Although failure to observe any guidance contained in the Code is not in itself an offence, that failure may be taken by a court in criminal proceedings as a relevant factor in determining whether or not a person has breached any of the provisions of the regulations to which the guidance relates.

- (1) Code of Practice : Safety and Health at Work for Gas Welding and Flame Cutting
- (2) Code of Practice : Safety and Health at Work for Manual Electric Arc Welding
- (3) Code of Practice : Safety and Health at Work for Industrial Diving
- (4) Code of Practice : Safety and Health at Work with Asbestos
- (5) Code of Practice for Bamboo Scaffolding Safety
- (6) Code of Practice for Safe Use and Operation of Suspended Working Platforms
- (7) Code of Practice for Safety and Health at Work (Land-based Construction over water -- Prevention of Fall)
- (8) Code of Practice for Safety and Health at Work in Confined Spaces
- (9) Code of Practice for Safety at Work (Lift and Escalator)

- (10) Code of Practice on Mechanical Handling Safety in Container Yards
- (11) Code of Practice for Metal Scaffolding Safety
- (12) Code of Practice for Safe Use of Tower Cranes
- (13) Code of Practice for Safe Use of Mobile Cranes
- (14) Code of Practice on Safety Management
- (15) Code of Practice on Safe Use of Excavators

Other relevant regulations

1	Boilers and Pressure Vessels Ordinance	Chapter 56
2	Fire Services Ordinance	Chapter 95
3	Dangerous Goods Ordinance	Chapter 295
4	Radiation Ordinance	Chapter 303
5	Shipping and Port Control Ordinance	Chapter 313
6	Lifts and Escalators (Safety) Ordinance	Chapter 327
7	Road Traffic Ordinance	Chapter 374
8	Electricity Ordinance	Chapter 406
9	Builders' Lifts and Tower Working Platforms (Safety) Ordinance	Chapter 470

3. General Concept of Work Safety

Most accidents can be prevented by taking simple measures or adopting proper working procedures. If we work carefully and take appropriate safety measures, there will definitely be fewer work injury cases, and our workplace will become a safe and secure place to work in. The Occupational Safety and Health Ordinance, which came into operation on 23 May 1997, covers most workplaces in order to protect the safety and health of employees at work. Other legislation applicable to container handling industry includes the Factories and Industrial Undertakings Ordinance and its subsidiary legislation, in particular the Factories and Industrial Undertakings (Cargo and Container Handling) Regulations. Employees should cooperate with their employers and other persons in complying with the safety legislation and guidelines, and should not do anything to endanger themselves and other persons.

3.1 Definition of Accident

An accident is a single, or a series of, unplanned event which may be causing death, injury, occupational disease, or lead to equipment or property damage, or damage to the working environment.

3.2 Consequences of Accidents

Workplace accidents not only cause sufferings to the victims and their families, they also incur costs arising from work stoppages, insurance claims, medical and rehabilitation expenses, etc.

3.3 Causes of Accidents

- Inadequate control by management
- Improper working procedures
- Unsafe environment
- Unsafe act

3.3.1 Unsafe Acts

- Operating a machine without permission or sufficient training
- Without wearing proper personal protective equipment
- Use of unsafe equipment or machines
- Improper method in handling materials
- Horseplay in the workplace

3.3.2 Unsafe Working Environment

- Venue, lighting or ventilation system is not properly arranged
- Lack of isolation and protective equipment
- Tools provided is defective or does not apply to the work
- The access and egress are not clear or free from obstruction
- Floor edges and working platform without fencing
- Placing materials in a passageway without planning
- Lifebuoy is not equipped for a workplace close to the shore

3.3.3 Prevention of Accidents

- The main purpose of investigating an accident is to prevent occurrence of similar accidents
- Employer should provide a safe working environment and personal protective equipment
- Employees should use personal protective equipment as instructed by their employers. If both employers and employees cooperated well, most accidents can be prevented
- Employer should provide safety training to their employees. By safety training, employees' safety awareness and vigilance could be enhanced which in turn reduce accident
- 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 civil claims against accidents

- The purpose of permit to work system is to ensure a workplace is safe for work

4. Potential Hazards in Various Operations and Activities on Container Handling Yard or Depots; and their Preventions

4.1 Working at Height

Reference

- Factories and Industrial Undertakings (Cargo and Container Handling) Regulations
- Code of Practice on Mechanical Handling Safety in Container Yards

Potential Hazards

- Worker fall from toppled working platform
- Worker fall from height

Preventive Measures

- Every regular approach over a dock, quay or wharf shall be maintained safe for persons employed. This means that docks, quays and wharves shall be organised and maintained so that workers can easily move about in all areas in which they may have to work or to which they may have to gain access without being in danger of falling, being struck, being trapped, etc.
- No person shall be allowed to work on top of a container unless adequate precautions have been taken to prevent fall of person from the container. Such precautions include wearing of a safety belt attached to an independent lifeline and a suitable anchorage.
- Working at height means a worker is liable to fall from height at a vertical distance 2 metres or more. To prevent worker from falling from height, the contractor should provide suitable working platform and suitable and adequate safe access to and egress from every place of work on the site, as well as proper fencing to a dangerous place. Working platforms should be erected by competent scaffolders. Working platforms shall be properly designed, for example, installation of suitable safe means of access and egress, handrails and guardrails, all joints can be screwed with bolts easily, and adequate supports to strengthen the stability of the scaffold.

- When provision of a safe working platform or safe access and egress is impracticable, safety nets and safety belts should only be used and the safety belt should be anchored to a secure anchorage point or an independent lifeline.

4.1.1 Fencing

- Floor edges and openings shall be installed with secure fencing.
- If you notice any dangerous places that have not been installed with fencing or the fencing has been damaged, reinstall or repair the fencing. If this is beyond your capability, inform your supervisor at once.

4.1.2 Ladder

- Use a ladder which is 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.
- Place the ladder at an appropriate angle. For straight ladder, the ladder should be placed on a 1:4 ratio 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.
- Ladder's upper or lower end shall be securely fixed or secured by another worker.
- 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.
- If there are electrical installations nearby, do not use metal ladders.
- If work is carried out 2 metres or more above the floor, use a suitable working platform.
- An appropriate portable ladder should be adopted by a worker for access to a workplace at height. The minimum height that the top of a ladder should be extended above the landing place to act as handrails is 1.0 metre. The

gradient of resting a slanting ladder should be 75°. When a ladder is used for access and egress, inspect the ladder for any defects before use and ensure the ladder is stable and resting on an even and solid ground. Never join short ladders to form a long one for use. If a portable ladder is insufficient in length for use, replace it with an extension ladder or ladder of sufficient length.

4.2 Stability of cargo and container stacking

Reference

- Factories and Industrial Undertakings (Cargo and Container Handling) Regulations
- Code of Practice on Mechanical Handling Safety in Container Yards

Potential Hazards

- Insecurely stacked cargo and container falling from height and hit a worker

Preventive Measures

Landing and supporting of containers

- To avoid any possibility of damage to the containers, containers should be unloaded carefully. Containers should not be dragged or pushed over any surface.
- A firm, flat, well-drained surface, clear of obstructions and projections on the ground for supporting containers should be provided. On the ground, containers should be directly supported by their four bottom corner fittings only.
- To unload containers onto vehicles, containers should be supported by their corner fittings only.

Ground condition of container yard

- Containers should only be stacked on a firm and level ground. In particular no ground should be used for container stacking unless:
 - it is suitable for the purpose as regards its location, geological, drainage and ground water conditions;

- it is free from any soft or weak spots;
 - it is provided with sufficient drainage system to ensure that it remains firm and stable at all times;
 - where it is formed by filling, it has been adequately compacted and consolidated to avoid any loose and soft spots;
 - it has sufficient load bearing capacity for the purpose and that the imposed load is uniformly distributed; and
 - it has been assessed and certified safe and sufficiently firm and stable by a qualified geotechnical engineer, if necessary.
- The container yard should be properly maintained. Any unsafe or unusual ground conditions should be made good immediately.

Stacking of containers on ground

- Safe procedure for container stacking, unstacking and handling should be exercised in the container yard. Containers should always be properly stacked and where necessary secured with stacking cones. When stacking containers, adequate contact between the top and bottom corner fittings should be ensured.
- The stacking height of containers should be as low as possible in accordance with determinant factors of ground condition, plant and machinery, competency of workers and the need of business. Stacks of empty containers should be clustered at all times; whenever there is an isolated stack, it should be re-shaped to even stacks. If containers are to be stacked in cluster, the ends of rows of stacked containers should be stepped to improve visibility for container handling equipment moving onto avenue from lane.
- Containers should be lashed in strong winds and container lifting operations should be suspended in adverse weather conditions.

4.3 Use of Machinery

Reference

- Factories and Industrial Undertakings (Guarding and Operation of Machinery) Regulations

Potential Hazards

- If dangerous part of machinery is not properly guarded, worker could be hurt by the dangerous part due to entanglement, shearing, crushing, trapping or cutting

Preventive Measures

- Do not use a power tool (such as saw, grinder and drill) unless its dangerous parts have been effectively guarded.
- 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.
- For machinery repairing, worker should not dismantle the protective guard while testing a machine for ease of adjustment.
- For repairing the revolving parts of machinery, avoid contact of revolving parts with the personal belongings to prevent from being caught by the machinery. Do not conduct cleaning work on a machine which is in motion and adopt measures to prevent personnel not responsible for the repairing work from coming near.

4.4 Woodworking machinery (mainly in circular saw)

Reference

- Factories and Industrial Undertakings (Woodworking Machinery) Regulations

Potential Hazards

- The high speed woodworking machines (such as circular saw, spindle moulders) create nip points which can lacerate body parts
- The blade catches the timber and violently throws it back to the front of the saw, towards the operator

Preventive Measures

- The top of a circular saw shall be covered by a strong and easily adjustable guard.
- There shall be a riving knife behind and in direct line with a circular saw.
- The part of a circular saw below the bench table shall be protected by 2 plates of metal or other suitable materials.
- A suitable push-stick shall be kept available for use at the bench.

4.5 Safe Use of electricity and Maintenance of electrical installation

Reference

- Factories and Industrial Undertakings (Electricity) Regulations

Potential Hazards

- Occupational accidents, such as electric shocks, burns, fires and explosion
- Small currents passing directly through the heart during electrocution can cause fatal arrhythmias

Preventive Measures

- The following situations would lead to electricity accidents: the insulation of the electrical tool being used is damaged, electric arc welding work is conducted at a humid environment, and the electrical tool is modified by the worker rendering the live parts exposed. The following items are capable of preventing accidents of electric shock: loads should not be placed on electric wires, regularly inspect and maintain electrical tools, and adopt "permit to work" system.
- All hand-held portable tools should be double-insulated. The design of double-insulated electrical tools is targeted at current leakage.
- 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.

- Double-insulated tool is identified by being distinctively marked. This marking consists of the double insulation symbol (a square within a square).
- Non-double insulated hand tool should be grounded to prevent electric shock accident.
- Any electric power tools and extension leads should be checked periodically by a qualified electrician.
- Before using an electric tool, check the tool and its plug and connecting cable.
- Do not use a damaged tool.
- Always comply with the safety measures for electrical works and never insert electric wires into a socket directly.
- Workers should not use electrical appliances if their clothes or hands are wet.
- Place the electric cable and hose of a tool at an appropriate position to avoid tripping hazards.
- Do not use an electric tool unless its connecting cable is well protected.
- Do not use an electric tool unless its metal casing is earthed and its power supply is provided with an earth leakage circuit breaker.
- Do not repair or alter any electrical installation unless competent to do so.
- If you meet any fault or problem, report it to your supervisor immediately.
- The wiring and connections for any electrical appliance using outdoors must be waterproof.
- Avoid using electrical equipment in congested and wet workplace. Use suitable personal protective equipment such as insulating gloves and mat if necessary.
- Electrical work should only be carried out by authorized persons or competent persons under the immediate supervision of an authorized person (only a registered electrical worker of appropriate grade should be appointed as an authorized person or a competent person).

- Risk assessment should be conducted by a competent person before commencement of work to identify any risk of electrical hazard. Appropriate safety precautions should be devised to eliminate or control the electrical hazards involved (a permit-to-work system should be implemented where necessary).
- Before and during electrical installation work, effective arrangements should be in place to ensure that the electricity source is safely isolated, e.g. by locking out off the power supply source with warning notices displayed so as to avoid carrying out live work.
- Suitable personal protective equipment, such as insulating gloves and mat, should be provided and used if necessary.
- Adequate information, training, instruction and supervision should be provided for workers engaged in electrical works.

4.6 Lifting operation using lifting appliances and gear

Reference

- Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations
- Code of Practice for Safe Use of Tower Cranes
- Code of Practice for Safe Use of Mobile Cranes

Typical lifting appliances

- Tower crane
- Crawler-mounted crane
- Truck-mounted crane
- Wheel-mounted telescopic crane

Typical lifting gear

- chain sling
- rope sling

- ring
- hook
- plate clamp
- shackle
- swivel
- eyebolt

Potential Hazards

- Overturning of the crane
- Overloading of the crane leading to breaking and collapse of the lifting boom
- Objects falling down during lifting operation and hit workers below
- Lifting boom collided with obstacles
- Lifting boom touched overhead power lines

Preventive Measures

- Lifting appliances and lifting gear must be regularly tested and examined by competent examiner. (Regarding colour coding of lifting gear, please refer to the relevant guidance of Works Branch of Development Bureau).
- Lifting appliances shall be maintained regularly by competent person so as to ensure they are always kept in good operating conditions.
- Follow the safe working instructions of the manufacturer of a lifting appliance.
- Automatic safe load indicator shall be installed at a crane.
- **6-month period** - The owner of any chain, rope, or lifting gear used for raising or lowering or as a means of suspension shall ensure that each chain, rope or lifting gear in use has been thoroughly examined by a competent examiner with the issuance of approved form in the preceding 6 months before it is used.
- **12-month period** - Lifting appliances shall be thoroughly examined by a

competent examiner with the issuance of approved form at least once in the preceding 12 months.

- Crane operators shall attain 18 years old, have undergone relevant training and hold valid certificates.
- Before using lifting gear such as hook, shackle or chain sling, check whether there is any wear and tear.
- Lifting gear used in lifting operation shall be marked with safe working load.
- Check the weight of the load to be lifted.
- Do not exceed the safe working load of a lifting appliance or lifting gear.
- Mobile cranes should only be operated on uniform, level and firm ground with sufficient load bearing capacity to withstand the maximum in-service loadings of the crane;
- In order to avoid the sinkage or collapse of the supporting surface and overturning or collapse of the crane, the loading should be distributed over a sufficiently large area. Steel plates of adequate strength, suitable mats or suitable timber blocking should therefore be used;
- If outriggers are provided , the beams should be fully extended as far as practicable. The jacks should be suitably extended so that all the crane tyres are clear of the ground;
- Adopt the correct lifting method. The centre of gravity of goods should be checked to ensure the goods are lifted steadily and securely.
- Do not use a lifting appliance unless it has been inspected weekly and certified safe by a competent person.
- Do not use a lifting appliance unless it has been regularly repaired and maintained by a competent person. No unauthorized repair is allowed.
- Follow the safe working instructions of the manufacturer of a lifting appliance.
- Employ a signaller to assist the lifting when the operator of the lifting appliance does not have a unrestricted view.
- Do not work beneath any suspended load and do not work within the

lifting operation area.

- Use appropriate equipment, such as "goal posts" to restrict the height of the jib when there is a need for using a telescoping jib crane underneath a overhead cable.

4.7 Working with chemicals

Reference

- Factories and Industrial Undertakings (Dangerous Substances) Regulations

Chemicals generally classified in seven category, they are corrosive, explosive, toxic, harmful, irritant, oxidizing and flammable.

Potential Hazards

- Causing fire, explosion
- Releasing harmful/toxic gases or airborne particles
- Splashing of hot, corrosive or toxic liquid
- Resulting in injuries, ulcer, intoxication and even death
- For dangerous substances, the major routes of entry into the human body are ingestion, skin absorption and inhalation

Preventive Measures

- The essential information of a chemical label should include symbol, chemical name, particular risks and safety precautions.
- 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.
- Always keep the work area well-ventilated.
- Wear proper personal protective equipment. Aprons, safety shoes, rubber gloves and face shields should be used for handling chemicals.
- Don't touch chemicals with bare hands. Wear protective glove.

- Prohibit smoking and eating at workplaces where chemicals are being used or stored.
- Fully understand and follows the safe working procedures.
- Keep away from any ignition source when handling flammable substances.
- Flammable substances should be stored at a metal cabinet. Rags, after used for cleaning a flammable liquid, should be placed in a metal container with a lid.

4.8 Use of loadshifting machines

4.8.1 Forklift Truck

Reference

- Factories and Industrial Undertakings (Loadshifting Machinery) Regulation
- Factories and Industrial Undertakings (Cargo and Container Handling) Regulations
- Code of Practice on Mechanical Handling Safety in Container Yards

Potential Hazards

- If parts of forklift truck such as accelerator, brake, alarm are not in good condition and function properly, this will directly affect safe operation of the forklift truck thereby causing accident
- If the goods are not stacked properly, the goods may fall and hit the workers. If the goods are stacked too high, this will obstruct the driver's forward view, thereby causing accidents
- Improper use of forklift truck such as using forklift truck for transporting people, overload goods etc., could thereby causing accidents
- If the forklift truck drives on uneven floor or ram, this could affect the operation stability thereby causing accident

Preventive Measures

- The responsible person of a forklift truck should ensure the forklift truck shall only be operated by a person who has attained the age of 18 years and holds a valid certificate applicable to that type of forklift truck (Sections 3(a) & 3(b) of the LSMR).

For safe operation of a forklift truck in handling containers, the following safety precautions should be observed:

- only containers provided with forklift pockets should be lifted by a forklift truck.
- the forks should be fully inserted into the pockets. Under no circumstances should containers, with or without forklift pockets, be lifted by forks under the base.
- the truck should be fitted with an overhead guard of sufficient strength to protect the operator from the detachment of loads.
- the forks should be so designed as to prevent accidental detachment or lateral displacement when in use.
- any trapping points between fork arm mechanisms and fixed parts of the truck should be suitably guarded.
- seat belt should be fastened all the time during operation.
- tyre pressures should be checked daily, if appropriate.
- no load should be carried or raised with the mast tilting forward.
- when travelling, the fork arms should be lowered to the lowest practicable position.
- when the load obscures the operator's forward vision, the truck should be driven in reverse.
- when loaded forklift truck is moving down an incline, it should be driven in reverse.
- a safety device to give out visible and audible warning signals when the truck is driven in reverse direction should be provided.

- no person should be allowed to stand or pass under the elevated forks.
- only one container should be handled by the truck at a time unless otherwise recommended by the manufacturer, and no container should be handled by more than one forklift trucks at any one time.
- fork arms should be fully lowered when the truck is parked.
- when it is necessary for the operator to leave the truck unattended, the engine should be turned off with the brakes applied, the ignition and other keys removed, the forks tilted forwards flush with the floor and clear of the passageway; and, if the vehicle is on an incline, the wheels should be blocked.

4.8.2 Front loader and reach stacker

Reference

- Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations
- Factories and Industrial Undertakings (Cargo and Container Handling) Regulations
- Code of Practice on Mechanical Handling Safety in Container Yards

Lift trucks with special container handling attachments for handling containers are widely used in Hong Kong. Front loaders and reach stackers are the most common of these lift trucks.

Potential Hazards

- If the operator's view is partially obstructed by the left and right columns of the vertical mast of the front loader, there are blind spots in front of the loader
- The reach stacker operator could not have a clear and unobstructed rear view when he is sitting inside the driver's cabin. Blind spots are created by the lifting mast of the stacker
- There is no demarcation on the streets and sections in the container yard to separate persons from vehicles. There is also no sign to control the

direction of traffic in the container yard

- Grease on floor, uneven floor, ground subsidence and rugged or uneven weight of the container can lead to overturning of front loader or reach stacker

Preventive Measures

For safe operation of a front loader or a reach stacker, the following safety precautions should be observed:

- seat belt should be fastened all the time during operation.
- tyre pressures should be checked daily.
- where the operator does not have a clear and unrestricted view to ensure safe operation of the equipment, a signaller should be arranged to give him signals.
- the front loader or reach stacker should be equipped with suitable yellow flashing warning light. Safety devices to give out visible and audible warning signals when it is driven in reverse direction should also be provided.
- only container handling attachments recommended by the manufacturer should be installed to the equipment.
- no front loader or reach stacker should be operated under the conditions that grease on floor, uneven floor, ground subsidence and rugged or uneven weight of the container.
- for transporting containers with the front loader, the load should be carried with the main mast tilted backwards, the load carried close to the main mast and as low as possible to obtain the greatest stability or in a manner as recommended by the manufacturer.
- for transporting containers with the reach stacker, the load should be carried as close as possible to the truck, i.e. with the boom retracted as far back as possible.
- when it is necessary for an operator to leave the front loader or the reach stacker unattended, it should be parked on level ground with the parking brake applied, the transmission gear placed to neutral, the ignition key

removed, and the driving cabinet locked. For front loader, the lifting attachment should be lowered to the ground. For reach stacker, the boom should be lowered and retreated as far back as possible.

Other preventive measures

Traffic and pedestrian control

- Except at the waterside, the perimeter of an industrial undertaking of container handling using mechanical equipment should be fenced. The purpose of the fencing is to ensure that all people who want to enter the industrial undertaking are directed to the appropriate entry point, thereby facilitating control of people, particularly those who may have no appreciation of the hazards associated with container handling.
- The different areas of container handling such as container storage areas, work areas, passageways and pedestrian walkways in a container yard should be clearly designated by floor lines or traffic signs.
- Workers working in a container handling workplace should wear reflective vests.
- Only authorised vehicles or persons should be allowed to enter into the container yards.
- Flow pattern of mechanical equipment and vehicles handling containers should be carefully planned in order to minimise any conflict and potential hazards.
- Proper traffic control measures for mechanical equipment, vehicles and people should be established to minimise the possibility of accidents. Notices requiring pedestrians to use the designated walkways should be prominently displayed in suitable locations.
- The travelling speed of mechanical equipment and vehicles should be specified and restricted to ensure traffic safety. Safe speed limit signs should be prominently displayed so as to ensure the operators are aware of them.
- Yard-based vehicles including mechanical equipment should be equipped with suitable yellow flashing warning light which should be turned on

whenever they are utilized in a container yard.

4.9 Use of abrasive wheel

Reference

- Factories and Industrial Undertakings (Abrasive Wheels) Regulations
- Factories and Industrial Undertakings (Protection of Eyes) Regulations

Potential Hazards

- Bursting of wheels as the result of :
 - defective wheel
 - overspeeding
 - faulty mounting
 - misuse
- Contact with the wheel
- Injury to the eyes from flying particles

Preventive Measures

- A notice, in English and Chinese, stating the maximum permissible speed in revolutions per minute specified by the manufacturer for every abrasive wheel shall be kept permanently fixed in the grinding room or place where grinding is carried out.
- Every abrasive wheel shall not be operated at a speed in excess of the maximum permissible speed in revolutions per minute specified by the manufacturer for that wheel.
- Select the appropriate abrasive wheel.
- Every abrasive wheel shall be properly mounted.
- Every abrasive wheel shall be mounted by a competent person appointed by the proprietor in writing.
- A guard shall be provided and kept in position at every abrasive wheel in motion.

- Persons carrying out dry grinding operations and truing or dressing an abrasive wheel should wear a dust/mist mask or respirator and eye protectors.

4.10 Working in confined spaces

Reference

- Factories and Industrial Undertakings (Confined Spaces) Regulation
- Code of Practice for Safety and Health at Work in Confined Spaces

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 without limiting the generality of the foregoing, includes any chamber, tank, vat, pit, well, sewer, tunnel, pipe, flue, boiler, pressure receiver, hatch, caisson, shaft or silo in which such risk arises. However, a lightwell is not a confined space.

Potential Hazards

- The major hazards in a confined space include the presence of the following:
 - a flammable, explosive or oxygen enriched atmosphere
 - a harmful or toxic atmosphere
 - an oxygen deficient atmosphere
 - free flowing solids or liquids
 - excessive heat
- The threats against the safety and health of workers include:
 - serious injury arising from a fire or explosion
 - loss of consciousness arising from an increase in body temperature caused by, for example, heat stress in the work environment
 - loss of consciousness or asphyxiation arising from gas, fume, vapour or the lack of oxygen
 - drowning arising from an increase in the level of liquid
 - asphyxiation arising from a free flowing solid or the inability to reach a respirable environment due to entrapment by a free flowing solid

Preventive Measures

- To appoint a competent person to carry out risk assessment for work in the confined space before a worker enters a confined space.
- To carry out an air monitoring to determine if a hazardous atmosphere exists by a competent person using a suitable gas detector which is correctly calibrated before a worker enters a confined space.
- The purpose of testing the gases in the procedures of confined spaces operations is to determine whether the amounts of gas components in a confined space exceed the dangerous levels or not.
- To ensure that no workers other than certified workers enter or work in the confined space.
- Entry into a confined space for work should be permitted only after the issue of a valid certificate. Any person enters a confined space should wear appropriate personal protective equipment. With adequate safety precautions being taken, a self-contained respirator should be worn when a worker entering a confined space to rescue an unconscious worker.
- A person shall be stationed outside a confined space to communication with the workers inside when work is being carried out in the confined space.
- To ensure that the risk assessment report and the related certificate issued are displayed in a conspicuous place at the entrance of the confined space.
- Avoid accumulating the exhaust gases inside the confined space, and ensure the fresh air ducts extend to all locations of the workplace.

4.11 Gas welding and flame cutting safety

Reference

- Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation
- Factories and Industrial Undertakings (Protection of Eyes) Regulations
- Code of Practice : Safety and Health at Work for Gas Welding and Flame Cutting

Normally, the colour of oxygen cylinder and acetylene cylinder are black and maroon respectively.

Potential Hazards

- Fires and explosions resulted from the release of flammable fuel gases or oxygen into the atmosphere
- Fires and explosions resulted from flashback at the blowpipe or overheating of gas cylinder
- Explosions from over-pressurisation of the gas supply system
- Due to the radiation and toxic fumes or gases emitted during the process, the resultant health problems include: (i) eye discomfort and burns from the intense light and heat emitted from the operation, and (ii) corneal ulcer and conjunctivitis from foreign particles e.g. slag and cutting sparks
- Illness due to inhalation of fumes or gases formed during the process, such as metal fume fever, bronchial and pulmonary irritation

Preventive Measures

- Do not use the equipment for gas welding or flame cutting unless you have attained the age of 18 years and hold a valid certificate.
- Do not use any gas cylinder unless it has been fitted with flashback arrestors.
- Wear personal protective equipment.
- Keep gas cylinders in an upright position at a ventilated area.
- Place fire extinguishers within reach.
- Keep gas cylinders in an upright position and secure it properly to avoid overturning. Keep them far from a workplace where hot processes are being undertaken.
- If gas leakage is detected, report it to your supervisor immediately.
- If there are other people, a screen should be used for segregating the sparks to avoid injuring others.

- Flammable substances should not be stored in workplaces for welding work.

4.12 Electric arc welding safety

Reference

- Factories and Industrial Undertakings (Protection of Eyes) Regulations
- Code of Practice : Safety and Health at Work for Manual Electric Arc Welding

Potential Hazards

- The common welding-related hazards include electric shock, radiation, heat and toxic fumes
- Long-term inhalation of metal dust may lead to nonfibrotic pneumoconiosis
- The ultraviolet rays generated in electric arc welding would cause hazards to the eyes of a worker

Preventive Measures

- Avoid conducting welding on wet floor or at open area during rainy day;
- Suitable personal protective equipment, such as eye and face protectors, insulated welding gloves and safety shoes or boots, should be provided to and used by the welding worker;
- Keep the welding area well ventilated with suitable and sufficient lighting as well as suitable fire extinguishers available.

4.13 Use of suspended working platform

Reference

- Factories and Industrial Undertakings (Suspended Working Platforms) Regulation
- Code of Practice for Safe Use and Operation of Suspended Working

Platforms

Potential Hazards

- Workers falling from height
- Falling object hit workers below

Preventive Measures

- A competent person is responsible for on-site inspection, supervision on the installation and use of the suspended working platform.
- Every person working on a suspended working platform shall be at least 18 years old, and have undergone training and obtains a certificate in respect of such training.
- Every person carried on a suspended working platform shall wear a safety belt that is attached to the independent lifeline.
- The safe working load and the maximum number of persons carried shall not be exceeded when the suspended working platform is used.
- A wire rope shall be replaced immediately if there is any damage.
- A suspended working platform shall clearly and legibly mark on the platform the safe working load, the maximum number of persons that may be carried at any one time, every person riding on a suspended working platform shall wear a safety belt properly attached to an independent lifeline.
- Every suspended working platform should be inspected in the immediately preceding 7 days before its use by a competent person. A statement to the effect that it is in safe working order should be entered into an approved form by the competent person.

4.14 Working under noisy environment

Reference

- Factories and Industrial Undertakings (Noise at Work) Regulation

Potential Hazards

- Deafness that results from prolonged exposure to high-intensity sound
- Intermittent work in the noise environment will cause irritability, can distract concentration, can cause hearing damage and increase the risk of accidents

Preventive Measures

- If people have to work in ear protection zone, they will need suitable ear protectors (ear muffs or ear plugs) to reduce the hazard.
- Where there are high levels of impact noise, such as piling work, earmuffs and ear plugs may be used together to provide better noise reduction.

4.15 Manual Handling

Reference

- Occupational Safety and Health Regulation

A manual handling operation means that a load is moved or supported by a person's hands or arms, or by some other forms of bodily effort. It includes lifting, lowering, pushing, pulling and carrying the load.

Potential Hazards

- The waist is most likely to be injured if a worker lifts goods improperly. Incorrect manual handling operations involving awkward posture, incorrect application of bodily force, prolonged or frequently repetitive motions, jerky motion or unexpected movements and pressure, etc. can lead to injuries such as
 - strain and sprain, back pain, hernia and damage to the back
 - damage to the joints, ligaments, muscles and intervertebral discs, etc

Preventive Measures

- Avoid manual handling operations as far as possible to minimize the risk of injury.

- Estimate the weight of the load.
- Conduct manual handling operations with proper method.
- Lift an object with a correct posture. Holding the object close to the body, lifting with the legs by slowly straightening them and keeping the back straight.
- Sudden increase of the movement speed should not be done to avoid sustaining injury during manual lifting. Don't transporting a load by twisting the upper body only.
- Transporting goods with assistance of mechanical tools.
- Seek assistance from someone in lifting a load if necessary.
- Doing some warm-up exercises before conducting manual handling operation can render the muscle and cardiopulmonary system more adaptable to the change so as to reduce injury.
- Wear suitable protective equipment. Put on gloves as far as possible to protect your hands from any cut, scratch or puncture, and wear safety boots or shoes to prevent injury to toes by heavy falling objects.

4.16 Asbestosis

Reference

- Factories and Industrial Undertakings (Asbestos) Regulation
- Factories and Industrial Undertakings (Notification of Occupational Diseases) Regulations
- Code of Practice : Safety and Health at Work with Asbestos

Potential Hazards

- A worker while performing renovation/demolition work may inhale the fibers of asbestos
- Asbestosis is caused by the asbestos fibers penetrating into the lungs, causing scar tissue by making tiny cuts in the alveoli (air sacs), thus decreasing the amount of oxygen that the lungs can process

- Long-term inhalation of asbestos fibers may lead to lung cancer

Preventive Measures

- Consult or employ a registered asbestos consultant to conduct assessment and remove all the asbestos by registered contractors.
- Prevent the exposure of any workman to asbestos.
- Where it is not reasonably practicable to prevent exposure, reduce the exposure of any workman to asbestos to the lowest level reasonably practicable by measures other than the use of respiratory protective equipment.
- Provide every workman who is or is liable to be exposed to asbestos with approved respiratory protective equipment that is suitable for the circumstances.
- Ensure the full and proper use by each workman of the respiratory protective equipment.

4.17 Working with silica based materials (pneumoconiosis)

Reference

- Factories and Industrial Undertakings (Notification of Occupational Diseases) Regulations

Potential Hazards

- Silicosis is caused by inhalation of fine particles of dust containing crystalline silica. The dust penetrates deep in the lungs where it attacks the tissues and causes progressive deterioration of pulmonary function. The onset of the disease is usually after some years of exposure to silica dust

Preventive Measures

- Every effort should be made to reduce the formation of dust at source by attention to processes and work method. If all practicable measures fail to confine environment dust contamination within occupational exposure

limits, exposed persons should wear suitable respiratory protection.

- Respiratory protection should be selected to protect against the prevalent dust level.
- Ensure that every worker fully and correctly uses the respiratory protective equipment.

4.18 Inclement Weather

Reference

- Code of Practice in Times of Typhoons and Rainstorms

Each year, Hong Kong experiences typhoons, rainstorms and thunderstorms between mid-spring and mid-autumn, and strong monsoon winds in summer and winter. These adverse weather may create danger to people working outdoors, especially in exposed areas. Sometimes, people working in covered structures or indoors may also be affected.

Potential Hazards

- Collapse of temporary structures or plants causing injury to people nearby and damage to property
- Loss of body balance resulting in falls
- Flying or falling objects
- Electric shock or electrocution to people directly or through conductive objects
- Fire
- Electric shock or electrocution due to leakage of current from wet electrical equipment
- Slipping arising from wet floor surface
- Slipping of tools, equipment, or articles from hands
- Flooding leading to drowning and damage to plants or structures

- Landslips as a result of persistent heavy rainfall
- Collapse of roads

Preventive Measures

- Suspend all container loading and unloading work and lash the containers
- Stop work at places with risks of falling objects or fall of persons.
- Remove or secure loose materials.
- Secure plants and scaffolds.
- Use suitable personal protective equipment e.g. safety helmets.
- Protect from breakage of window glasses.
- Stay away from metal pipes, cable, structure or fences.
- Remove metal objects from body.
- Use battery-operated radio for listening weather broadcasts.
- Follow safety instructions.
- Always remain alert on changes of working environment.
- Be familiar with the escape route in case of emergency.
- Use safe means of transport and route for evacuation.
- Evacuate to safe shelters to avoid exposure to strong winds.

4.19 Very Hot Weather Warning

- While a Very Hot Weather Warning is in force, employers should assess the risk of heat stroke to their employees and adopt effective preventive measures such as providing cool drinking water, setting up temporary sunshade and providing mechanical aids to reduce physical exertion of employees. Employees should drink water regularly and be mindful of their physical condition. If early heat stroke symptoms such as headache and thirst appear, they should inform their supervisors, and seek medical help immediately.

5. Emergency Preparedness

5.1 Action to be taken in case of an emergency

- In the event of a fire or a leakage of dangerous substances during container handling operations, employees should know what actions to be taken. Employees should receive sufficient training in safety at workplace. They should know the relevant information (e.g. evacuation routes, a safe assembly point, etc.) and safety procedure.

5.2 Action to be taken in time of bad weather

- Employees working outdoor in times of bad weather (e.g. typhoon, thunderstorm and rainstorm) may sustain serious or fatal accidents. The employer should formulate safety measures to prevent any accident in the workplace.
- Employees working outdoors in exposed areas in times of bad weather should stop work and take shelter.

5.3 Qualified first aider, first aid facilities and emergency equipment

Appropriate emergency equipment should include but are not limited to:

- The quantity of the first aid facilities in container handling yards or depots depend on the work and number of employee. 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. The wording "FIRST AID" shall be clearly marked on the first aid box.
- According to the Factories and Industrial Undertakings (Cargo and Container Handling) Regulations, first aid boxes or cupboards shall be provided in every working place at a dock, quay or wharf, in the ratio of one box or cupboard to every 100 persons or part thereof employed.
- One person trained in first aid shall be readily available during working hours when the number of persons employed in a working place is 30 or more but less than 100.
- Two persons trained in first aid shall be readily available during working hours when the number of persons employed in a working place is 100 or

more.

- Life-saving appliances for the rescue of persons from drowning should be equipped at a wharf.
- Flushing facilities and eyewashes.
- Absorbent material for cleaning up minor chemical spills.

5.4 Evacuation procedure

- The employer should draw up emergency measures and evacuation procedure. For instance, the procedure for fire escape.

5.5 Emergency drills

- 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.
- Emergency preparedness is vital because, when an emergency does occur, a quick and correct response is necessary to reduce injuries, illnesses, property damage, environmental harm and public concern. Management should identify the types of emergencies the organization needs to plan, organize, practice and prepared for. A drill should be regularly conducted so as to allow workers to familiarize with the procedures of contingency plan, fully understand their responsibilities in contingency plan, and identify the deficiencies during the drill so as to make improvements and amendments.

5.6 Special precautions for high wind or inclement weather conditions

- Special consideration should be given to the high wind conditions and the wind induced funnel effect which may lead to sliding or toppling of containers; larger and empty containers are more likely to be affected by wind. The critical wind pressure is lower for multiple rows than for single row.
- The following factors should be taken into consideration in order to reduce the wind effect on containers:
 - limiting the stacking height;

- block stowage;
 - stacking on the ground with sound condition;
 - block stowage with loaded containers in the uppermost tier; and
 - use of stacking fittings or lashings, in particular the exposed rows.
- Furthermore, containers should be stacked so that the longitudinal axis is in line with the predominant wind direction. In the case of a storm or typhoon warning, the containers at the corners of the block should be secured.
 - No person should be permitted to enter or remain in a container stacking area if there is a reason to anticipate container movement due to wind.
 - Containers should be lashed in strong winds and container lifting operations should be suspended in adverse weather conditions.
 - The selective closing of certain stack areas in stages must be co-ordinated to prevent mechanical equipment working in the same areas where men are applying lashings. Similar precautions must be taken when the stacks are being unlashd afterwards.

6. Accidents and Dangerous Occurrences Reporting System and Procedures

6.1 Handling of Work Injury

- For any work injury to employee, employee should inform the supervisor immediately and receives suitable treatment.
- When an accident occurs in a container yard or depot, worker should immediately notify his/her supervisor.
- Unless a worker has received adequate first aid training, he should not move the victim.
- When the supervisor is informed of the accident:
 - should assist the injured worker to receive suitable treatment;
 - should carry out the preliminary accident investigation; and
 - if the worker is seriously injured or need to be hospitalized, the supervisor should inform the safety department and call police immediately.

6.2 Reporting Workplace Accident and Dangerous Occurrence

(1) Reports of Accidents resulting in death or serious bodily injury

- For accident that causes the death of, or serious bodily injury to an employee, employer should notify it to an occupational safety officer of the Labour Department (LD) within 24 hours after the time when the accident occurred. Report it in writing to an occupational safety officer of the LD within 7 days after the date of the accident if notification of the accident is not contained in a written report that contains the particulars required.

(2) Reports of Accidents resulting in Incapacitated

- For accident that results in the employee being incapacitated from working for at least 3 days, employer should report it in writing to an occupational safety officer of the LD within 7 days after the date of the accident.

(3) Reporting Dangerous Occurrences

- Every dangerous occurrence which occurs at a workplace, whether any personal injury has been caused or not, shall be reported to an occupational safety officer of the Labour Department within 24 hours of its occurrence.

7. Analysis of the Possible Causes of, and Means of Preventing, Accidents and Diseases that are common on Container Handling Yards or Depots

Workplace accidents are not just causing sufferings to the victims and their families. They also incur costs arising from work stoppage, insurance claims, medical and rehabilitation expenses.

The majority of fatal accidents related to container handling is fall of persons or objects. It is recognised that most workplace accidents are preventable. Very often, the scenarios and causes have common phenomena. Unless the causes of workplace accidents are properly understood, lessons will not be learned and suitable improvements will not be made to secure the future safety and health protection of those who may be affected by the work activity. The responsible persons of workplaces need to understand why events happened, and act to make sure that they do not happen again.

7.1 Accident Analysis and Experience Sharing

- Please refer to the accident cases which are contained in a series of accident casebooks published by the Labour Department for experience sharing purposes.
- In addition, for the recent trends on accidents, their root causes and preventive measures, please refer to the latest statistics and analysis on workplace accidents and occupational diseases provided in our Home Page for adding other accident cases for reference.

Having regard to the individual circumstances and needs, in-house training course providers may also add in the related accident cases for the purposes of experience sharing.

8. Fire Prevention Measures and Use of Fire Extinguisher

Reference

- Factories and Industrial Undertakings (Fire Precautions in Notifiable Workplaces) Regulations

Combustion requires three basic elements: Fuel, Air and Heat Source.

- Fuel - it is the material that can be burnt, and includes flammable materials commonly found at workplaces.
Such as solvent-based adhesives, which are used in laying rubber floor tiles (the highest fire risk work procedure), are highly flammable. In addition, fire is most likely caused by spraying of flammable liquid.
- Air – Oxygen is the most common supporter of combustion. Air generally contains 21% oxygen.
- Heat Source – Examples of common heat sources are : cigarette butts not yet extinguished, sparks generated from metal welding and cutting processes etc.

Potential Hazards

- In fires, people may get hurt by heat and flames, but the majority of people die or get injured in fires due to inhalation of hazardous smoke or toxic gases

Preventive Measures

- Keep workplace clear and tidy all the time.
- Be careful when using machine and equipment which will generate sparks or heat.
- No smoking and naked flame at any storage area of flammable or explosive materials.
- Knowing the storage place of fire extinguishers and their operation method : generally speaking, fire could be prevented when one or several of the basic elements of combustion are removed:
 - Insulating the fuel;

- Insulating the air; or
- Cooling down the heat source.





- What type of fire extinguisher you use should depend on what type of fire it is. If you use an inappropriate extinguisher in a fire, it may intensify the fire and/or cause serious injury. For example, burning of metallic sodium solids cannot be put out by a water type fire extinguisher. Oxygen deficiency is caused by using a carbon dioxide type fire extinguisher at a narrow and poorly ventilated area.

- In order to ensure that the fire service installations will be functioning properly when needed, these installations should be routinely tested and maintained.

- Smoke doors should be closed at all times.

- Make sure that the assembly points after fire evacuation are known.

Type of extinguisher suitable for extinguishing fire involving

Type of fire Type of extinguisher	Class 1 Paper, Textiles, Wood, Plastic	Class 2 Flammable liquids, Solvent, Oil, Grease	Class 3 Electrical Appliances, Motors, Electrical switches	Notes
Carbon Dioxide Gas 	-	✓	✓	Vapours will asphyxiate. Withdraw to open air after use.
Water 	✓	-	-	Never on fires involving electrical or flammable liquids or metals.
Dry Powder 	✓	✓	✓	Discharged dry powder may reduce visibility and cause disorientation.
Foam 	✓	✓	-	Never on electrical fires.

9. Personal Protective Equipment

Reference

- Factories and Industrial Undertakings (Noise at Work) Regulation
- Factories and Industrial Undertakings (Protection of Eyes) Regulations
- Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation
- Factories and Industrial Undertakings (Confined Spaces) Regulation
- Factories and Industrial Undertakings (Dangerous Substances) Regulations

Personal protective equipment (PPE) is intended to be worn or otherwise used by a person at work and protects the person against one or more hazards to his/her safety or health. Use of PPE is the last resort when controlling the sources of accident is impracticable. PPE should be handled with care and stored properly when not in use. Store it in a dry and clean cabinet. The equipment should be kept clean and maintained in good condition.

Employers have duties on guidance, training and supervision with respect to use of PPE. They should ensure that their employees know why and when PPE is used, its maintenance or replacement schedule and limitations.

PPE should be provided by employers. Employees must wear PPE for the entire period of exposure to hazards. Do not put your PPE away just because the work lasts for only “a few minutes”. If any defect on PPE is found, report it to the employer immediately and replace it.

Factors to consider in selecting suitable PPE:

- Can the PPE provide effective protection against the hazards and whether it is suitable for use in the work process? For example, eye protectors designed for metal or rock cutting cannot provide adequate protection for gas welding or flame cutting workers;
- Can the PPE prevent or reduce the hazards without creating unsafe working conditions?
- Can the PPE be adjusted to fit the user's body properly?

- Has consideration been given to the health of the user?
- What is the load of PPE imposed on the user? For example, duration of use of the PPE, physical strength required for the work and requirements on communication and visibility.
- If one or more types of PPE have to be worn, are they compatible? For instance, will the use of a certain type of respirator prevent the user from wearing an eye protector correctly?

9.1 Safety Helmet

- Wear a safety helmet on a container yard or depot.
- Safety helmets primarily intended to protect the top of the heads from being injured by falling objects.
- A suitable safety helmet should bear appropriate marking indicating the conformity to certain international/national standards such as European Standard.
- Keep a sufficient buffer distance between the top of the head and the shell of the helmet.
- Keep the harness of the helmet clean and make sure that it fits well.
- Do not drill any holes on the helmet or use it for pounding.

9.2 Safety Shoes

- Safety shoes should have steel toe caps, steel soles, slip-proof and water-proof characteristics.

9.3 Full body harnesses work with independent lifeline and fall arrester

- The most suitable way to use safety belt is to attach its snaphook to higher level than user's waist.
- When falling from height, full body harness (commonly known as parachute type) could better reduce the downward momentum and protect user's waist from injury than the general safety belt.

9.4 Safety Gloves

- Protect hands from getting injured by abrasion; cuts and punctures; contact with chemicals; electric shock; skin infection.
- Types of safety gloves including rubber gloves, steel, mesh gloves, leather gloves, wrist and arm protective devices.
- Workers should not wear cotton gloves for operating a machine with revolving parts so as to avoid causing injury to hands due to entangling of cotton gloves with the revolving parts of the machine.

9.5 Ear Protection

- Ear muffs are the most efficient noise isolation ear protectors.
- An ear protector cannot be used unless its model and brand have been approved by the Labour Department.
- Wear ear protectors in areas with high noise levels.
- Properly wear ear protectors according to the manufacturer's instructions.
- Do not reuse disposable ear plugs.
- Clean ear protectors regularly.

9.6 Eye Protection

- A wise worker will certainly take good care of his eyesight.
- A small fragment may cause serious consequences if it enters one's eyes.
- When there is a risk of eye injury, such as in concrete breaking or using abrasive wheels, you should wear suitable eye protectors.
- Take proper care of the eye protectors provided to you.
- Replace damaged or defective eye protectors immediately.
- Ensure that eye protectors are comfortable to wear, and keep clean.
- Use eye protectors for eye protection — do not put it on your head or hang it on your neck.
- Bear in mind that eye protectors are replaceable, but not your eyes.

9.7 Breathing Apparatus

- To protect worker against dust; fibres, hazardous gases and fumes and to prevent worker from oxygen deficiency.
- Type of breathing apparatus including : disposable cartridge respirators; full-face/half-face respirators; air-supplied hoods; self-contained respirators.
- When using breathing apparatus, it must be properly fitted on the wearer's face.
- Breathing apparatus should be cleaned thoroughly after each use.

9.8 Protective Clothing

- Protective clothing is being used as working clothes or uniform, it also protects workers against injuries caused by hazards such as contact with chemicals or flame, striking, stabbing, radiation, drowning, extreme cold, hot or adverse weather conditions.
- 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-resistant aprons and lifejacket used for land-based work carried out adjacent to water.
- Protective clothing should be well fit and comfortable. Try it on before buying. In addition, we should also consider whether the protective clothing would affect the flexibility or movement, the clothing is durable, the clothing can be easily cleaned and what types of under garments should be used with the protective clothing.

List of Reference

Part A : Guides to Legislation

1. A Brief Guide to the Factories and Industrial Undertakings (Confined Spaces) Regulation
2. A Brief Guide to the Occupational Safety and Health Ordinance
3. A Brief Guide to the Occupational Safety and Health Regulation
4. A Guide to Section 6BA of Factories and Industrial Undertakings Ordinance Cap 59 - Mandatory Basic Safety Training
5. A Guide to the Factories and Industrial Undertakings (Cargo and Container Handling) Regulations
6. A Guide to the Factories and Industrial Undertakings (Dangerous Substances) Regulations
7. A Guide to the Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation
8. A Guide to the Factories and Industrial Undertakings (Loadshifting Machinery) Regulation
9. A Guide to the Factories and Industrial Undertakings (Noise at Work) Regulation
10. A Guide to the Factories and Industrial Undertakings (Protection of Eyes) Regulations
11. A Guide to the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations
12. A Guide to the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation
13. A Guide to the Factories and Industrial Undertakings (Woodworking Machinery) Regulations
14. A Guide to the Factories and Industrial Undertakings Ordinance (Section 6A) - General Duties of Proprietors
15. A Guide to the Factories and Industrial Undertakings Ordinance (Section 6B) - General Duties of Persons Employed
16. A Guide to the Factories and Industrial Undertakings Ordinance (Section 6A & 6B) - Know your General Duties

17. A Pictorial Guide to Factories and Industrial Undertakings (Noise at Work) Regulation
18. Handbook on Guarding and Operation of Machinery
19. Reporting Workplace Accidents and Dangerous Occurrences

Part B : Codes of Practice

20. Code of Practice : Safety and Health at Work for Gas Welding and Flame Cutting
21. Code of Practice : Safety and Health at Work for Manual Electric Arc Welding
22. Code of Practice : Safety and Health at Work with Asbestos
23. Code of Practice on Mechanical Handling Safety in Container Yards
24. Code of Practice for Safe Use and Operation of Suspended Working Platforms
25. Code of Practice for Safety and Health at Work in Confined Spaces
26. Code of Practice for Safe Use of Tower Cranes
27. Code of Practice for Safe Use of Mobile Cranes

Part C : Guidance Notes

28. Guidance Notes on Appointment of Competent Persons for Noise Assessment at Workplaces
29. Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems
30. Guidance Notes on Factories and Industrial Undertakings (Noise at Work) Regulation
31. Guidance Notes on Fire Safety at Workplaces
32. Guidance Notes on Inspection, Thorough Examination and Testing of Lifting Appliances and Lifting Gear
33. Guidance Notes on the Inspection, Thorough Examination and Testing of Suspended Working Platforms
34. Guidance Notes on the Selection, Use and Maintenance of Safety Helmets
35. Guidance Notes on Safe Use of Loadshifting Machines for Earth Moving Operations on Construction sites
36. Guidance Notes on Safety at Work for Maintenance of Low Voltage Electrical Switchgears

37. Guidance Notes for the Safe Isolation of Electricity Source at Work
38. Guidance Notes for Safe Use of Fork-lift Trucks
39. Guide for Safety at Work - Electric Shock Hazard of Manual Electric Arc Welding Work
40. Guide for Safety at Work - Safe Use of Electric Plugs
41. Chemical Safety in the Workplace - Guidance Notes on Risk Assessment and Fundamentals of Establishing Safety Measures
42. Chemical Safety in the Workplace - Guidance Notes on Personal Protective Equipment (PPE) for Use and Handling of Chemicals
43. Chemical Safety in the Workplace - Guidance Notes on Safe Use of Flammable Liquids

Part D : Other Guidebooks

44. A Casebook of Occupational Fatalities in the Container Handling and Storage Sector
45. An Analysis on Occupational Fatalities - Casebook Volume 1
46. An Analysis on Occupational Fatalities - Casebook Volume 2
47. An Analysis on Occupational Fatalities - Casebook Volume 3
48. An Analysis on Occupational Fatalities - Casebook Volume 4
49. A Guide on Employer's Safety Policy
50. A Practical Guide to Industrial Noise Reduction
51. A Safety Guide for Freight Container Inspection
52. Basic Electrical Safety Measures in the Workplace
53. Beware of Fall at Work
54. Five Steps to Information, Instruction and Training
55. Five Steps to Risk Assessment
56. Guide on Safety at Work in times of Inclement Weather
57. Hazards During Chemicals in Use and Safety Guidelines
58. Industrial Safety (General Duties of Persons Employed)
59. Prevention Against Fall from Height
60. Safe Practices in Operating Fork Lift Trucks
61. Safe Systems of Work
62. Safety at Work - A Guide to Ladders and Elevated Working Platforms
63. Safety at Work - A Guide to Personal Protective Equipment
64. Safety at Work - Personal Protective Clothing
65. Safety Guide for Work in Manholes

66. Safety Hints on Operation of Suspended Working Platform
67. Safety in the Use of Abrasive Wheels
68. Work for a Safer, Healthier Workplace
69. Working with Employers
70. Working Safely with Flammable Materials
71. Working Safely with Hand Tools



Occupational Safety and Health Branch
Labour Department

Annex 5

**Answer Sheet for Mandatory Basic Safety Training Course
(Container Handling)**

Mandatory Basic Safety Training Course (Container Handling)

Answer Sheet

Name of Course Provider : _____

Class Ref. (TRC1): _____

Examination Paper Code : _____

Date of Examination : _____

Examination Start Time : _____

Name of Trainee : _____

Mark : _____

Instructions to Trainees

1. The examination paper consists of 20 multiple choice questions. Each correct answer carries 5 marks. Please answer all questions.
2. The passing mark of the examination is 60. The examination must be finished in 30 minutes.
3. Please read the questions carefully and put a tick in the answer box you choose for the question.
4. If you tick more than one answer box for one question, no marks will be awarded.
5. Please initial next to your final answer whenever amendment is made.
6. If you have any questions, please raise your hand and ask the examiner or invigilator.

Question	Answer			
	A	B	C	D
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question	Answer			
	A	B	C	D
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please tick only one box to denote if the trainee has used the question paper reading service and also if it is read in English.

Not required

Read in English

Read in language other than English

Signature of Trainee : _____

Date: _____

Name and
Signature of Invigilator : _____

Date: _____