Enhanced Green Card Safety Training for architectural Professional

Government Policy

Safety encompasses:

- The Developers
- The Architects
- The Consultants
- The Engineers
- Site Management
- Safety Staff
- The Workers

Co-Operation

- The Government
- The Employers
- The Employees

How Can The Employers Help?

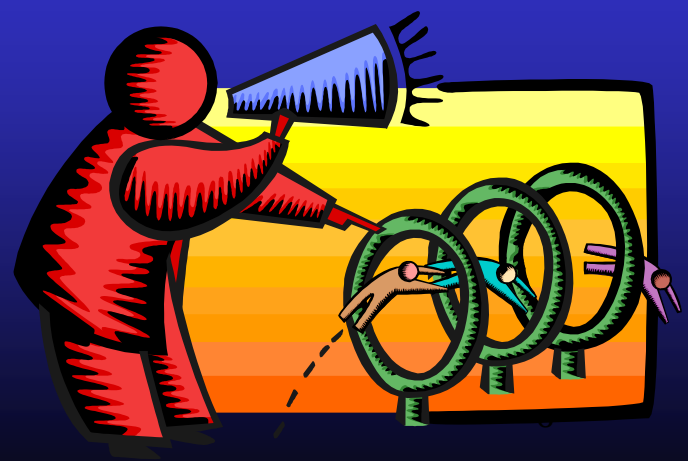
- Ensure a safe working environment
- Prepare proper, workable Method Statements
- Pass on information to workers and Site Staff
- Ensure adequate safety supervision

The Employees Can Help By

- Cooperate with Site Management
- Carry out the correct procedures when so instructed
- Wear and use P.P.E.

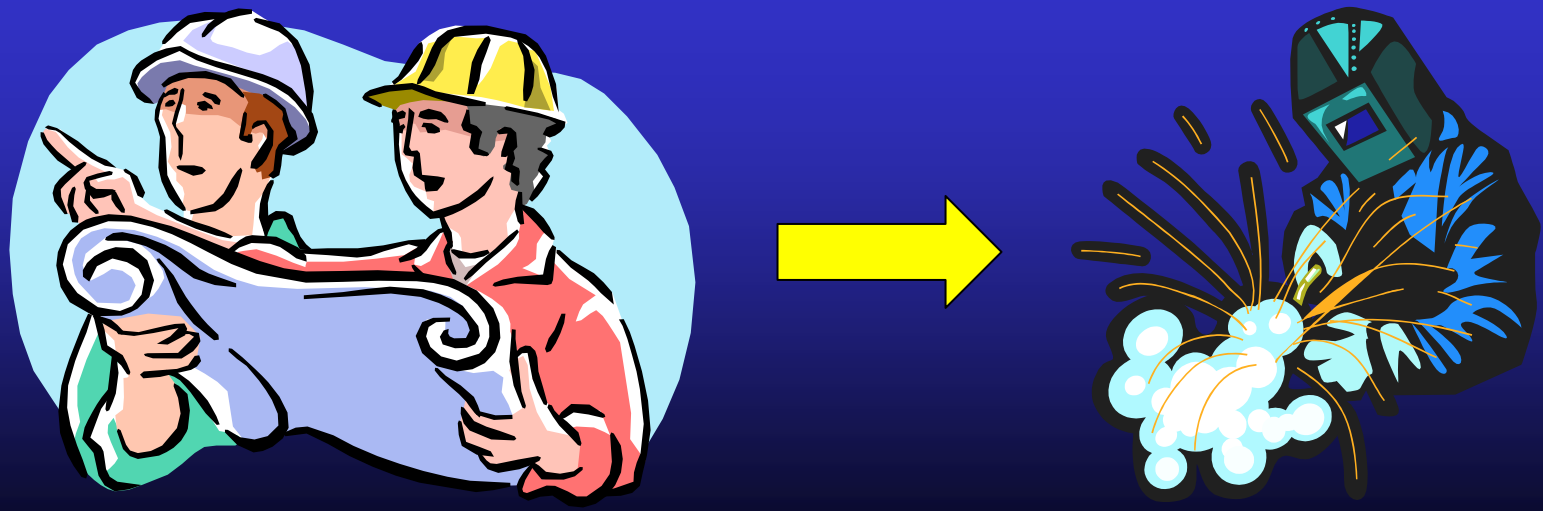
The Government Can Help By

- Promote and publicise safety issues
- Find the resources and expertise to educate everyone
- Give advice and assistance where practicable
- Enforce legislation through the Labour Department



Concept of Safety Policies

- The Policy Statement
- The Organisation for Safety within the Company, and individuals' responsibilities
- The Implementation of Safety Regimes

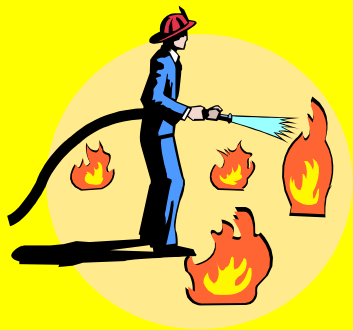


Other Safety Documentation

Company Safety Policy

Site Safety Plan

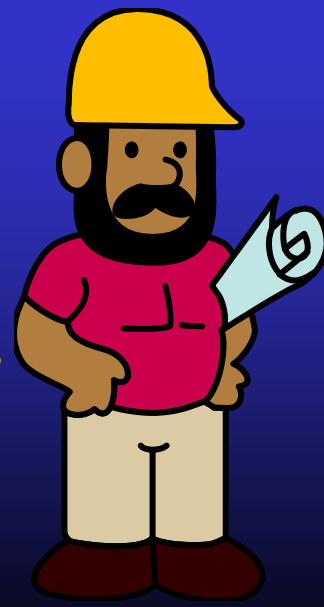
Site Fire Safety Plan



Site Security Plan

Basic Rules of Safety for Workers

- Observe the Safety Policy and Site Safety Plan
- Co-operate with safety personnel at all times
- Only carry out work for which you have been trained
- Wear and use the P.P.E. issued to you
- Immediately report any unsafe practices or conditions
- Don’t take chances or “short cuts”

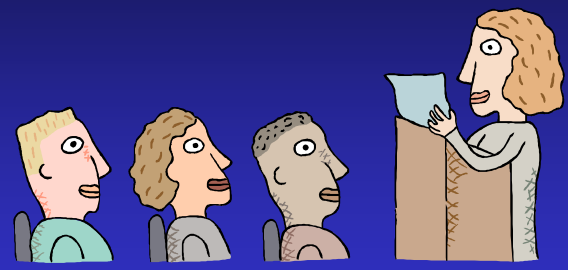


Toolbox Talks –

The Objectives:

- Remind workers of specific job related safety
- Re–affirm the safety hazards related to the job
- Remind them of the precautions they should take to minimise the hazard(s)

Advantages of Toolbox Talks



- Carried out at place of work
- Carried out while worker is working
- It is short and to the point (5 minutes)
- Not much organisation or training aids
- Carried out to small groups or individuals
- Carried out by Safety Supervisor

Employer's (Proprietor's) Responsibilities

The law for Health and Safety in Hong Kong is found in the:

FACTORIES AND INDUSTRIAL UNDERTAKINGS ORDINANCE OF 1955 – CHAPTER 59

The Specific section relating to the responsibilities of the Employer is:

Section 6A

“Reasonably Practicable”

Weigh up the **cost** against the **risk**

Section 6A

Section 6A (1) states:

"It shall be the duty of
every proprietor of
an industrial undertaking
to ensure,
SO FAR AS IS
REASONABLY PRACTICABLE,
the health and safety at work
of all persons employed by him
at the industrial undertaking"

Section 6A

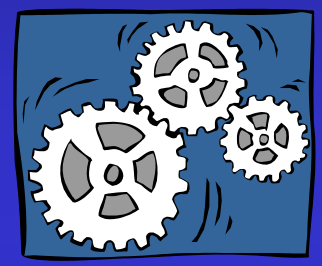
Section 6A (2) states:

Without prejudice to the generality of a proprietor's duty under subsection (1), the matters to which that duty extends include in particular –

a) the **provision and maintenance of plant and systems of work** that are, so far as is reasonably practicable, safe and without risks to health;

Section 6A

Section 6A (2) states:



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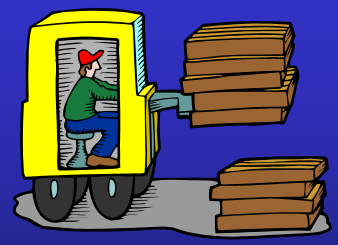
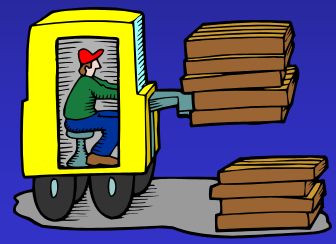


b) arrangements for ensuring, so far as is reasonably practicable, safety and absence of risks to health in connection with **use, handling, storage and transport of the articles and substances**;

Section 6A

Section 6A (2) states:



b) arrangements for ensuring, so far as is reasonably practicable, safety and absence of risks to health in connection with **use, handling, storage and transport of the articles and substances**;

c) the **provision of such information, instruction, training and supervision** as is necessary to ensure, so far as is reasonably practicable, the health and safety at work of all persons employed by him at the industrial undertaking;

Section 6A

Section 6A (2) states:

c) the **provision of such information, instruction, training and supervision** as is necessary to ensure, so far as is reasonably practicable, the health and safety at work of all persons employed by him at the industrial undertaking;

d) so far as is reasonably practicable as regards any part of the **industrial undertaking** under the proprietor's control, the **maintenance** of it in a condition that is safe and without risks to health and the **provision and maintenance of means of access to and egress** from it that are safe and without such risks; and

Section 6A

Section 6A (2) states: (cont)

d) so far as is reasonably practicable as regards any part of the **industrial undertaking** under the proprietor's control, the **maintenance** of it in a condition that is safe and without risks to health and the **provision and maintenance of means of access to and egress** from it that are safe and without such risks; and

e) the provision and maintenance of a **working environment** for all persons employed by him at the industrial undertaking that is, so far as is reasonably practicable, safe and without risks to health.

Employees responsibilities to **health and safety** can be found in

Factories and industrial undertakings Ordinance of 1955

Chapter 59

Section 6B

Section 6B

Section 6B (1) states:

It shall be the duty of every person employed at an industrial undertaking while at work –

1. To **take reasonable care for the health and safety of himself and of other persons** who may be affected by his acts or omissions at work; and
2. As regards any duty or requirement imposed on a proprietor of the industrial undertaking or any other person by this Ordinance for securing the health and safety of persons employed at the industrial undertaking, to **co-operate with him** so far as is necessary to enable that or requirement to be performed or complied with.

Other Safety Legislation under the Factories and Industrial undertakings Regulations

- Codes of Practices
- Guidance Notes

Construction Sites (Safety) Regulations

Construction Work means:

- The construction, erection, installation, re-construction, repair, maintenance, renewal, alteration, improvement, dismantling or demolition

- Any work involved in preparing for any operation shown above, including the laying of foundations and excavation for foundations

Construction Sites (Safety) Regulations

Construction Work means:

- Any work involved in preparing for any operation shown above, including the laying of foundations and excavation for foundations

- The use of machinery, plant, tools, gear and materials in connection with the above mentioned

Construction Sites (Safety) Regulations

These Regulations are applicable to:

- all construction work
- all construction sites; and
- the machinery, plant, tools, gear and materials used for the construction work

Construction Sites (Safety) Regulations

The Regulations cover:

- Construction, maintenance and inspection of hoists Safety of hoistways and cages, test and examination of hoists
- Safe scaffolds, working platforms and ladders,etc.
- Safe means of access and egress
- Prevention of falls of persons – duty to wear safety belts

Construction Sites (Safety) Regulations

The Regulations cover:

- Safe scaffolds, working platforms and ladders,etc.
- Safe means of access and egress
- Prevention of falls of persons – duty to wear safety belts
- Safety of excavations

Construction Sites (Safety) Regulations

The Regulations cover:

- Safe means of access and egress
- Prevention of falls of persons
  -duty to wear safety belts
- Safety of excavations
- Prevention of inhalation of dusts and fumes
- Fencing of machinery

Construction Sites (Safety) Regulations

The Regulations cover:

- Prevention of falls of persons

  -duty to wear safety belts
- Safety of excavations
- Prevention of inhalation of dusts and fumes
- Fencing of machinery
- Trained and competent persons to operate mechanical equipment

Construction Sites (Safety) Regulations

The Regulations cover:

- Safety of excavations
- Prevention of inhalation of dusts and fumes
- Fencing of machinery
- Trained and competent persons to operate mechanical equipment
- Use of electricity on construction sites
- Safety helmets
- Protection from falling materials and debris

Construction Sites (Safety) Regulations

The Regulations cover:

- Use of electricity on construction sites
- Safety helmets
- Protection from falling materials and debris
- Lighting of working places
- Projecting nails from wood
- Prevention of drowning
- Maintenance of fire escapes and fire fighting equipment

Construction Sites (Safety) Regulations

The Regulations cover:

- Projecting nails from wood
- Prevention of drowning
- Maintenance of fire escapes and fire fighting equipment
- Sanitary conveniences
- Notification of construction work
- First aid facilities and provision of stretchers
- Shelter and facilities for meals

Occupational Safety and Health Ordinance

1997

1st Came into effect as from the 17th June 1997

Occupational Safety and Health Ordinance

One of the most important aspect of this Ordinance is the power given to the Ordinance Safety Officers to impose:

Improvement Notices

and

Suspension Notices

Occupational Safety and Health Ordinance

Provisions of the Ordinance:

- ensure safe design and maintenance of plant
- guarding of dangerous parts of plant
- young persons, under the age of 18, are not allowed to clean dangerous plant
- certain parts of the workplace are securely fenced
- certain fire precautions are stipulated

Occupational Safety and Health Ordinance

Provisions of the Ordinance:

- young persons, under the age of 18, are not allowed to clean dangerous plant
- certain parts of the workplace are securely fenced
- certain fire precautions are stipulated
- Workplace to be kept clean, properly ventilated, adequate lighting, floors drained

Occupational Safety and Health Ordinance

Provisions of the Ordinance:

- certain fire precautions are stipulated
- Workplace to be kept clean, properly ventilated, adequate lighting, floors drained
- Hygiene at workplaces, sanitary conveniences, supply of drinking water
- First Aid facilities

Occupational Safety and Health Manual Handling Requirements

1. Preliminary Assessments of the risks
2. Avoid manual handling operations where possible
3. Future Risk Assessments if operation is necessary
4. Reduce risks by using mechanical means where possible

Occupational Safety and Health Manual Handling Requirements

2. Avoid manual handling operations where possible

3. Future Risk Assessments if operation is necessary

4. Reduce risks by using mechanical means where possible

5. Arrangements for protective and preventative measures

Occupational Safety and Health Manual Handling Requirements

3. Future Risk Assessments if operation is necessary

4. Reduce risks by using mechanical means where possible

5. Arrangements for protective and preventative measures

6. Provide information and training

Accident Prevention

A **near miss** is defined as:

"An undesired event that **MAY** result in injury or damage to property"

An **accident** is defined as:

"An undesired event which results in injury or property damage"

Causes of Accidents (management)

Lack of proper supervision

Bad Housekeeping

Causes of Accidents (management)

Lack of proper Method Statement

Lack of all types of safety training

Causes of Accidents (management)

Working at speeds to get the job done

Lack of adequate working platforms

Causes of Accidents (Workers)

- Lack of knowledge or skill
- Taking short cuts
- Simple laziness
- The “Macho” image
- Piece work – time is of the essence
- “Accidents never happen to me”

Principles of Accidents Prevention

- All “near misses” should be reported, investigated and remedial actions instigated
- Issue correct P.P.E. and ensure it is properly worn and used
- Safety training, information and education are essential
- Continuation training is essential

Principles of Accidents Prevention

- Issue correct P.P.E. and ensure it is properly worn and used
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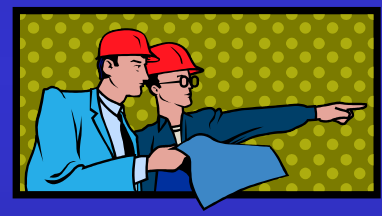

- Management must know their commitment and adopt the “right” attitude towards safety
- All accidents must be properly investigated and the “true” cause of the accident established. Only then can proper remedial actions be instigated

Principles of Accidents Prevention

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- The workforce must be properly and constantly supervised

Principles of Accidents Prevention

- Risk Assessments should be carried out and preventative and precautionary recommendations passed on to the workers
- The workforce must be properly and constantly supervised
- Assess all training needs throughout the project
- Management must plan well in advance the site layout and the logical sequence of works
- Safety Supervisors must have some form of safety training before appointed

Summary of Accident Prevention Control

The Worker

The Equipment or Machine

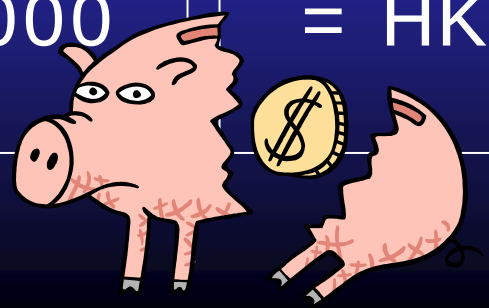
The Environment and the Site

Costs of Accidents

- The Injured Worker
- The Families
- The Employer
- Society

Workers Compensation Ordinance – Payments

Death	Total Paralysis
72 months salary to a maximum of HK$ 21,000 per month = HK$ 1,512,000	96 months salary to a maximum of HK$ 21,000 per month = HK$ 2,016,000



Accident & Dangerous Occurrence Reporting Procedures

Death or serious injury must be reported within 24 hours

- The name of the person
- The nature of the injury
- The time and place of the accident
- A brief explanation of the circumstances of the accident

Accident & Dangerous Occurrence Reporting Procedures

Death or serious injury must be reported within 24 hours

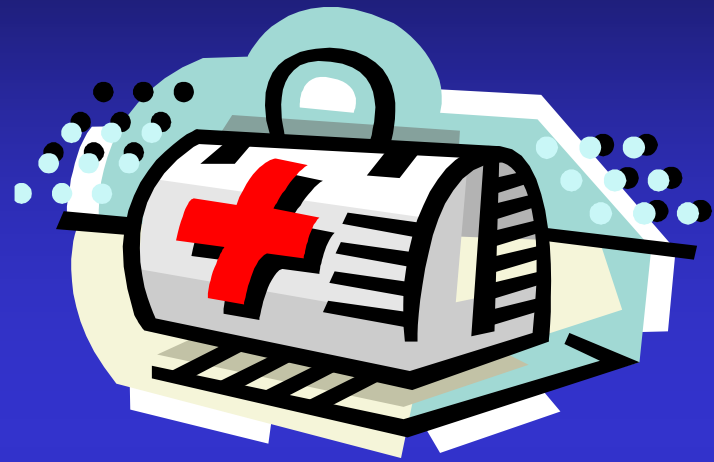
- The nature of the injury
- The time and place of the accident
- A brief explanation of the circumstances of the accident
- A written report on a **FORM 2** must be submitted within 7 days
- Minor accidents for incapacity for less than 3 days must be reported on a **FORM 2B**

Accident & Dangerous Occurrence Reporting Procedures

- A written report on a **FORM 2** must be submitted within 7 days
- Minor accidents for incapacity for less than 3 days must be reported on a **FORM 2B**
- Dangerous occurrences must be reported within 24 hours, in writing – injury is not a necessary criteria
- NB. All fatal accidents must also be reported to the Police

First Aid

- The Constructions Sites (Safety) Regulations cover the requirements for First Aid Facilities



- Schedule 2 of these regulations gives details of the minimum contents of First Aid Boxes

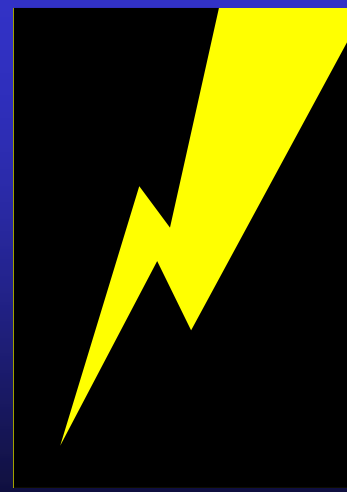
Emergency Procedures

Anyone coming onto a construction site for the first time should be told:

- How to contact the Safety Department
- The policy on how to call the Ambulance, the Labour Department, the Fire Services and the Police
- The location of fire fighting equipment and how to use it
- Assembly, Access and egress points

Emergency Procedures (cont)

- The policy on how to call the Ambulance, the Labour Department, the Fire Services and the Police
- The location of fire fighting equipment and how to use it
- Assembly, Access and egress points
- Procedures for Typhoons and Heavy Rainstorms
- The criteria for stopping work at heights during high winds



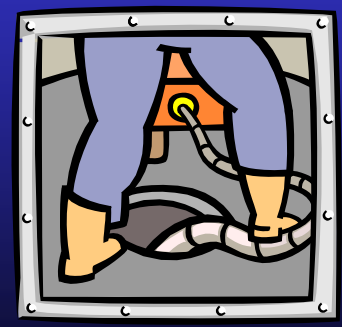
Setting up a Safe Site

1. Proper planning of site layout is very important

2. Check what restraints are around the site, i.e. roads, railways, flight paths, water areas, overhead and underground services, etc

3. Check for environmental problem such as dust, noise, fumes

4. Determined the plant and equipment you will require and whether you have sufficient trained and competent operators



Setting up a Safe Site

3. Check for environmental problem such as dust, noise, fumes
4. Determine the plant and equipment you will require and whether you have sufficient trained and Competent operators
5. Consider traffic control and a one way system if possible

Avoid head-on traffic

Setting up a Safe Site

3. Check for environmental problem such as dust, noise, fumes

4. Determine the plant and equipment you will require and whether you have sufficient trained and Competent operators

5. Consider traffic control and a one way system if possible

6. Consider temporary power supply and how best to lay cables

Safe Working Environment

- Check whether there is a need for a Noise Permit
- Will you need an excavation permit?
- What are the requirements of your hoarding permit?
- Ensure there is an adequate communication system, i.e. telephones, radio etc.
- What “dust” control procedures i.e. wheel wash etc.
- Ensure good lighting, ventilation etc

Good Housekeeping

- Look carefully at storage arrangements
- Keep rubble, debris and rubbish to a minimum
- Check the management, storage etc of the Dangerous Substances

Fire Precautions and Fire Prevention

Triangle of Fire

Common Causes of Fire Accidents

- Overloading the Power supply
- Poor insulation of connections, plugs, sockets, etc
- Faulty connections

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- Loose wires in plugs
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- Improper use of plugs and multi–adaptors

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Common Causes of Fire Accidents

- Loose wires in plugs
- No Residual Current Circuit Breakers (RCCB)
- Improper use of plugs and multi–adaptors
- Faulty connections
- No earthing
- Cables lying in water
- Damaged cables coming into contact with metal
- Bare wires

Some Preventative Measures

- Control burning of waste materials
- Never light a fire using flammable liquids
- Extinguished cigarettes before discarding
- Control the sparks from welding or cutting
- Check heating or cooling appliances for serviceability
- Storage of gas cylinders must be properly supervised

Some Preventative Measures

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-improper storage of gas cylinders

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- Check heating or cooling appliances for serviceability
- Storage of gas cylinders must be properly supervised
- Oily rags could cause spontaneous combustion.

-Improper storage/placement of paint

-Improper disposal of battery

Prevent Electrical Fires

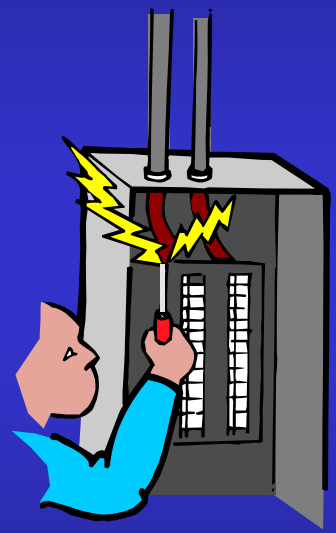
- Most electrical fires are caused by misuse of appliances or neglect
- Use of **multi socket adaptors** should be actively discouraged
- Follow the simple rule – ***one socket to one appliance***
- Lack of proper earthing to plugs, appliances etc.

Actions for Electrical Fires

- Switch off electrical supply
- DO NOT get closer than 1 meter from fire if electricity has not been switched off
- Use CO2 Extinguisher
- NEVER use water

Dangers of Working with Electricity

- Electrical shock, even small shocks can kill
- Burns caused by arcing, sparks etc
- Fire and explosion
- Arc eye from welding operations
- **All wiring, equipment and accessories shall be installed and regularly checked by licensed personnel**



Safe Use of Electrical Portable Equipment

- Check earthing
- Check casing of tool for damage
- Check cables, plugs, fuses etc for correct rating

- Check all switches on appliances move freely
- Ensure you extension lead is long enough

Safe Use of Electrical Portable Equipment

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Safe Use of Electrical Portable Equipment

- Check all switches on appliances move freely
- Ensure you extension lead is long enough
- Keep power cables off the floor and away from other metal
- NEVER connect portable tools to light sockets
- Disconnect tools when not in use.
- Get your tools checked by a Competent Electrician

Safety in Excavation

- Displacement of Earth
- Fall of persons into excavations
- Falling objects from sides of excavations
- Underground Utilities
- Build up of Toxic or flammable gases
- Ingress of mud by underground water, rain etc

Preventative Measures

1. Proper shoring to prevent collapse of walls

Preventative Measures

1. Proper shoring to prevent collapse of walls
2. Emergency escape routes
3. No heavy vehicles, materials within 2 meters of edge

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4. Substantial fencing, lighting, signs etc

Preventative Measures

1. Proper shoring to prevent collapse of walls
2. Emergency escape routes
3. No heavy vehicles, materials within 2 meters of edge
4. Substantial fencing, lighting, signs etc
5. Excavation works supervised by Competent Person
6. Excavation workers instructed in the dangers of working in excavations
7. Procedures for de–watering must be available
8. Before excavations start, all underground utilities should be identified

-Tarps are used to prevent from landslide

Manual Handling

Over $^{1}/_{3}$ of all accidents are directly attributable to "manual handling"

Common Types of Injury

- Hernia
- Torn muscles in back, arms or legs
- Slipped disc or Sciatica
- Lacerations, contusions, crushing to all parts of the body
- Sprains and Strains

Procedures to be Taught, Supervised and Adopted

1. Gloves should be worn
2. Wearing of safety shoes/boots
3. Assess the load for weight
4. Ask for assistance if too heavy
5. Check route is clear of trip hazards
6. Ensure you can see over the load

Procedures to be Taught, Supervised and Adopted

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6. Ensure you can see over the load
7. Avoid twisting and carrying simultaneously
8. It is better to push than pull

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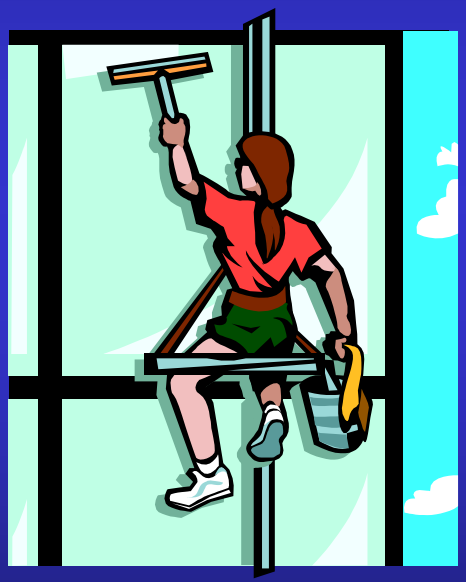
7. Avoid twisting and carrying simultaneously
8. It is better to push than pull
9. Management should arrange mechanical means of lifting

Scaffolds, Working Platforms & Ladders



Working at Heights
has many inherent hazards
and
many accidents happen
as a result of
bad scaffold management

Common Hazards

- Fall of person due to collapse of scaffolding
- Fall of person from scaffolding, ladder or working platform
- Fall of objects from above whilst working on scaffolding

The law and scaffolding

If a worker can fall more than 2 meters, the Proprietor must arrange a working platform and a safe system of work

Safe use of Scaffolds

- Over 15 meters high must be designed by an Engineer
- Bi–weekly inspections to be carried out by a Competent Person
- After adverse weather conditions must be inspected by Competent Person
- Scaffolds must have working platforms
- Safe access onto scaffold must be provided
- Independent life lines and fall arrestors must be provided if working platforms cannot be properly erected

Safe use of Scaffolds

- What's wrong with this photo?

It should be a **doubled scaffolding** with **working platforms, toeboards and railing**

Safe use of Scaffolds

- What's wrong with this photo?

Support of the scaffolding **resting on unstable edge of a trench**

Working Platforms Specifications

- Boards for working on must be at least 400mm wide
- Guard–rails between 900 – 1500mm with an intermediate one at between 450 – 600mm
- Toeboards at least 200mm high

Working Platforms Specifications

- What's wrong with these photos?

- **Guard rails** and **intermediate rails** are **missing.**
- **Orange mesh** acts as a **soft screen** only.

Working Platforms Specifications

What's wrong with this photo?

- **Working at height without safety belts**
- **Lack of working platform at scaffolding**

Safe use of Ladders

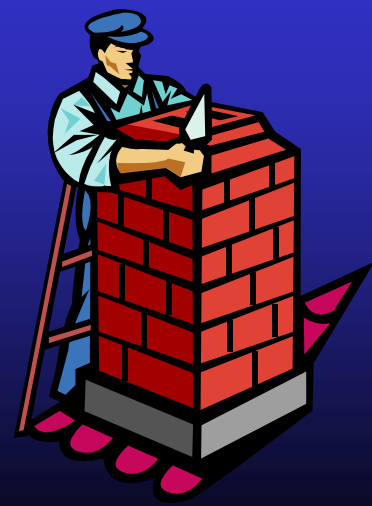
- There is legal requirement for ladders to be properly constructed and maintained and should be inspected regularly for incidents of disrepair
- Many ‘home – made” stools and plasterers’ inadequate working platforms should be banned from sites

Ladders and the Law

- Ladders must be of good construction.
- Home – made ladders and bamboo ladders should be actively discouraged
- Ladders must not be used if a rung is broken or missing
- Ladders should be lashed at the top, if not possible, properly “footed” at the base
- Ladders should, where possible, extend 1 meter above the landing place
- Ladder should be on firm level ground

Consider the Following

- Use both hands when climbing or descending a ladder
- Arrange ways of carrying tools and materials up and down a ladder
- Face the ladder when ascending or descending
- Be weary of your surroundings, i.e. traffic
- Do not place metal ladders near electrical wires and/or cables
- Do not support ladders from their rungs



Consider the Following (cont)

- Arrange ways of carrying tools and materials up and down a ladder
- Face the ladder when ascending or descending
- Be weary of your surroundings, i.e. traffic
- Do not place metal ladders near electrical wires and/or cables
- Do not support ladders from their rungs
- Try to set the ladder at a slope of 75°

Consider the Following (cont)

- Face the ladder when ascending or descending
- Be weary of your surroundings, i.e. traffic
- Do not place metal ladders near electrical wires and/or cables
- Do not support ladders from their rungs
- Try to set the ladder at a slope of 75^{o}
- Use ladders of sufficient length so that workers do not stand on the top rung

Consider the Following (cont)

- Be weary of your surroundings, i.e. traffic
- Do not place metal ladders near electrical wires and/or cables
- Do not support ladders from their rungs
- Try to set the ladder at a slope of 75°
- Use ladders of sufficient length so that workers do not stand on the top rung
- Never lash two ladders together to make it longer

Personal Protective Equipment (P.P.E.)

- P.P.E. should only be used as a last line of defence
- All other measures should be explored, and only if no other safe method can be devised, should P.P.E. be issued
- Workers should not be expected to provide their own P.P.E.

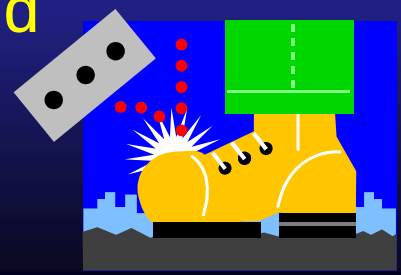
Principles of P.P.E.

1. P.P.E. should be designed properly and in most cases there is a legal requirement that they conform to BS, or equivalent, standards

2. P.P.E. should fit properly and their uses

3. The issue of P.P.E. must be strictly enforced

4. Provision for the checking, cleaning and maintenance of P.P.E. is essential



Types of P.P.E.

- **Safety Helmets**

Types of P.P.E.

- **Safety Helmets**
- **Eye Protection**
  - Respiratory Protection
  - Safety Belts and Harnesses (Working at Heights)
  - Ear Protection (Noise Control Area)
- **Safety Footwear Hand Protection**
  - Cotton for general purposes
  - Leather for rebar purposes
  - Rubber for contact with electrical equipment or chemicals
  - Steel

Working in Confined Spaces

a confined space
appears to be empty,
remember,
it may still hold
many dangerous hazards

Working in Confined Spaces

What are these Hazards?

- Lack of oxygen
- Toxic vapours, mists, dusts or fumes
- Flammable gases
- Physical hazards such as slipping
- Flash Floods
- Electric shock from portable lights, tools

Working in Confined Spaces

- Lack of oxygen
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- Electric shock from portable lights, tools
- Silica Dust

Working in Confined Spaces

- Toxic vapours, mists, dusts or fumes
- Flammable gases
- Physical hazards such as slipping
- Flash Floods
- Electric shock from portable lights, tools
- Silica Dust
- Corrosives or chemicals
- Wieler's disease

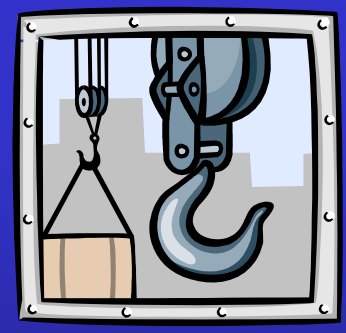
General Precautions for Confined Space Entry

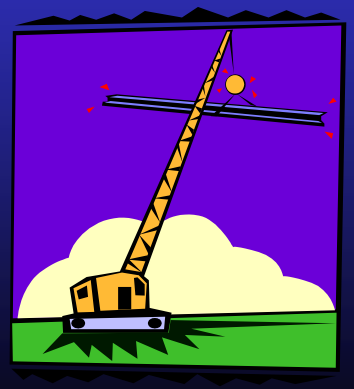
- Education and training of the hazards
- Testing the atmosphere before entering a confined space
- Supply, if necessary, good ventilation
- Ensure safe access and egress
- Ensure life – saving aids are available, with a trained First Aider
- Use, wherever possible, low–voltage equipment

Safety In Lifting Appliances

Some common lifting appliances:

- Fork Lift Trucks
- Excavators
- Crawler Crane
- Cages – but only if certified
- Lifting hooks and chains
- Crane lorries

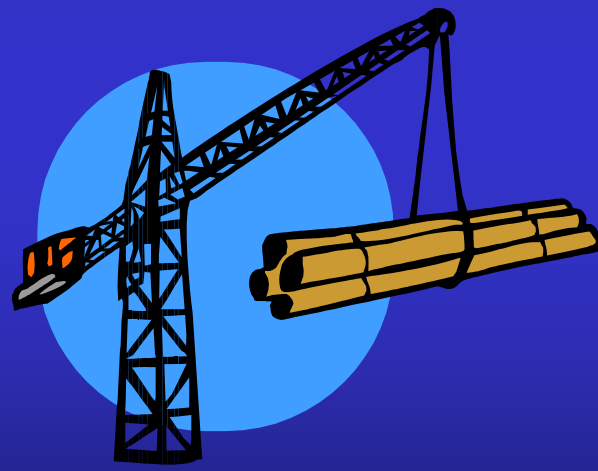




Safety In Lifting Appliances

Some common lifting appliances:

- Excavators
- Crawler Crane
- Cages – but only if certified
- Lifting hooks and chains
- Crane lorries
- Scissors Lifts
- Refuse Containers and lifting wires



- **Operators of Lifting Appliances must be trained and licensed to operate the Appliance**

Legal Requirement – Lifting Appliances

- All lifting appliances must be examined and certified as safe by a **Registered Professional Engineer (RPE) every 12 months**

- Many appliances need to be inspected **every week by a Competent Person**

Common Accidents with Lifting Operation

- Collapse of the Crane, and/or other power machineries

Common Accidents with Lifting Operation

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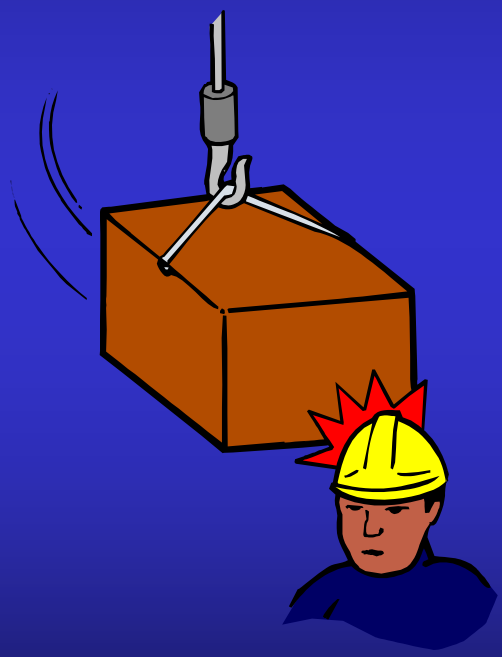
Common Accidents with Lifting Operation

- Collapse of the Crane, and/or other power machineries
- Broken Jib
- Fall of person
- Struck by a moving crane
- Struck by a swinging load
- Fall of objects from a load
- Contact with High Voltage Overhead Cables



Safety Hints for Lifting Appliances

- All Operators, Slingers, Bandsmen should be Trained and Competent
- Plant must be on level ground

•Plant not placed on level ground

Safety Hints for Lifting Appliances

- All Operators, Slingers, Bandsmen should be Trained and Competent
- Plant must be on level ground
- Loads must never exceed the Safe Working Load (SWL)
- SWL indicator must be functional
- Ensure audible overload alarm is working
- Keep all workers clear of suspended or moving load

Safety Hints for Lifting Appliances

- Loads must never exceed the Safe Working Load (SWL)
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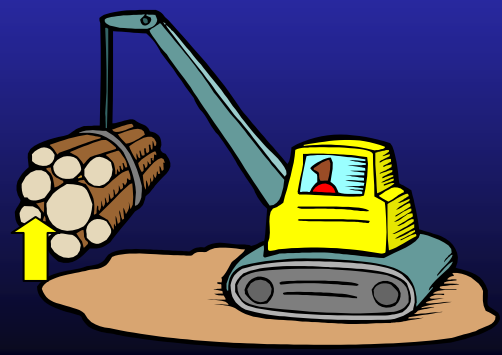
- Check for possible obstruction in the vicinity of the jib
- Avoid overwinding or allowing the hoist rope to run too far off the drum.

Safety Hints for Lifting Appliances

4. SWL indicator must be functional
5. Ensure audible overload alarm is working
6. Keep all workers clear of suspended or moving load
7. Check for possible obstruction in the vicinity of the jib
8. Avoid overwinding or allowing the hoist rope to run too far off the drum
9. Loads must be lifted vertically.



Safety Hints for Lifting Appliances

6. Keep all workers clear of suspended or moving load

7. Check for possible obstruction in the vicinity of the jib

8. Avoid overwinding or allowing the hoist rope to run too far off the drum

9. Loads must be lifted vertically

10. Loads must be correctly slung

11. Loads must not be left suspended without the Operator at the controls

Safety Hints for Lifting Appliances

7. Check for possible obstruction in the vicinity of the jib
8. Avoid overwinding or allowing the hoist rope to run too far off the drum
9. Loads must be lifted vertically
10. Loads must be correctly slung
11. Loads must not be left suspended without the Operation at the controls
12. The use of “tie ropes” is strongly advised to maneuver the loads

Electric Arc Welding

Common Hazards:

- Burns caused by sparks
- Damage to eyes by radiation, infra red or heat cataracts
- Skin Irritation due to Ultra Violet Rays
- Inhalation of Toxic Fumes and Gases
- Electric Shock
- Fire and Explosion

Some Control Measures

- Welding should not be carried out on wet floors, in humid conditions or in the rain
- All equipment and the work piece must be properly earthed
- The equipment must be properly maintained and checked for “leakage”
- The electric current should be as low as possible, voltage reduction devices can be fitted
- Suitable, approved shields, goggles with appropriate filter plates must be provided and enforced the use of them

Some Control Measures

- The equipment must be properly maintained and checked for “leakage”
- The electric current should be as low as possible, voltage reduction devices can be fitted
- Suitable, approved shields, goggles with appropriate filter plates must be provided and enforced the use of them
- Flame proof gloves and aprons are highly recommended
- Ventilation to prevent toxic fumes is very important

Some Control Measures

- Suitable, approved shields, goggles with appropriate filter plates must be provided and enforced the use of them
- Flame proof gloves and aprons are highly recommended
- Ventilation to prevent toxic fumes is very important
- In confined spaces check for flammable fumes before work commences

Some Control Measures

- Flame proof gloves and aprons are highly recommended
- Ventilation to prevent toxic fumes is very important
- In confined spaces check for flammable fumes before work commences
- Instruct other workers on how to treat victims for electric shock, and what action they themselves must take to ensure they too, do not become a victim

Gas Welding

The Hazards:

- Explosion of gas cylinders
- Fire Risks
- Inhalation of toxic fumes
- Damage to eyes by radiation
- Manual handling of gas cylinders

Some Control Measures

- Handle gas cylinders with care
- Both cylinders must be fitted with suitable and effective flashback arrestors
- Workpiece must not rest on cylinders
- Store cylinders in upright position
- When being used, cylinders must also be upright
- Equipment, Hoses, gauges etc must be checked daily for serviceability

Some Control Measures

- Both cylinders must be fitted with suitable and effective flashback arrestors
- Workpiece must not rest on cylinders
- Store cylinders in upright position
- When being used, cylinders must also be upright
- Equipment, Hoses, gauges etc must be checked daily for serviceability
- Suitable and approved eye protectors must always be used

Some Control Measures

- Workpiece must not rest on cylinders
- Store cylinders in upright position
- When being used, cylinders must also be upright
- Equipment, Hoses, gauges etc must be checked daily for serviceability
- Suitable and approved eye protectors must always be used
- Adequate ventilation must be provided

Some Control Measures

- Store cylinders in upright position
- When being used, cylinders must also be upright
- Equipment, Hoses, gauges etc must be checked daily for serviceability
- Suitable and approved eye protectors must always be used
- Adequate ventilation must be provided
- Fire extinguishers must be available at all times

Some Control Measures

- When being used, cylinders must also be upright
- Equipment, Hoses, gauges etc must be checked daily for serviceability
- Suitable and approved eye protectors must always be used
- Adequate ventilation must be provided
- Fire extinguishers must be available at all times
- Working cylinders must **not** be kept locked

Some Control Measures

- Equipment, Hoses, gauges etc must be checked daily for serviceability
- Suitable and approved eye protectors must always be used
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- Gas Cylinders must be on the same level as the worker

Some Control Measures

- Suitable and approved eye protectors must always be used
- Adequate ventilation must be provided
- Fire extinguishers must be available at all times
- Working cylinders must **not** be kept locked
- Gas Cylinders must be on the same level as the worker
- Gas Cylinders must be “closed off” when not in use

Preventive Measures

- Dust Control – Pneumoconiosis Disease
  i.e. ventilation, dust suppression, P.P.E. and good housekeeping,

Preventive Measures

- Dust Control
  i.e. ventilation, dust suppression and good housekeeping
- Substitution
- Personal Protection
- Medical Examination

Other Environmental Issues

- **Noise**
  - Environment Protection Department
  - Noise Permit
  - Noise Monitoring
- **Asbestos**
  - Environment Protection Department
  - Specialist Contractor
  - Survey and Removal

Other Potential Hazards

- **Working with Chemicals**
  - Material Safety Data Sheet (MSDS)
  - Warning Signs
  - P.P.E.
  - Specially trained personnel
- **Use of Cartridge-operated fixing tool**
  - Approved tools
  - Trained/ Competent personnel
  - Regular Maintenance

Safety Legislations:

1. Factories and Industrial Undertakings Ordinance
2. Occupational Safety and Health Ordinance
3. Shipping and Port Control Ordinance
4. Boilers and Pressure Vessels Ordinance
5. Builders' Lifts and Tower Working Platforms (Safety) Ordinance
6. Electricity Ordinance
7. Gas Safety Ordinance
8. Waste Disposal Ordinance
9. Dangerous Goods Ordinance
10. Fire Services Ordinance
11. Buildings Ordinance

Code of Practices:

1. Safety at Work (Lift and Escalator)
2. Safety and Health at Work for Industrial Diving
3. Safety and Health at Work with Asbestos
4. Safe Use and Operation of Suspended Working Platforms
5. Safety and Health at Work (Land-based Construction over Water – Prevention of Fall
6. Safety and Health at Work in Confined Spaces
7. Safety and Health at Work for Gas Welding and Flame Cutting
8. Bamboo Scaffolding Safety
9. Metal Scaffolding Safety
10. Control of Lead at Work
11. Safety Management
12. Safe Use of Tower Cranes

Code of Practices: (continue)

13. Control of Air Impurities (Chemical Substances) in the Workplace
14. Health at Work for Manual Electric Arc Welding
15. Safe Use of Mobile Cranes and Tower Cranes
16. Design and Construction of Builder's Lifts
17. Design and Construction of Tower Working Platforms
18. Gas Production & Supply – Avoiding Danger from Gas Pipes
19. Electricity (Wiring) Regulations
20. Demolition of Buildings (Draft)
21. Lighting, Signing and Guarding of Road Works

Contractual Provisions, e.g.

- Safety Plan
- Pay for Safety Scheme
- Independent Safety Audit Scheme
- Site Safety Cycle
- Metal Scaffolding

Useful Web Sites

- www.etwb.gov.hk (ETW Bureau, HKSAR)
- www.oshc.org.hk (Occupational Safety Health Council, HKSAR)
- www.info.gov.hk/labour (Labour Department, HKSAR)
- www.open.gov.uk/hse (HSE, UK)
- www.nsc.org (USA)
- www.NSCA.au (National Safety Council, Australia)

End