Building Electrical Installation

LEVEL III

Based on November 2018, Version 5

Occupational standards (OS)

Module Title: Working Safely in the Construction Industry

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December 2020

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This learning guide is developed to provide you the necessary information regarding the following content coverage and topics

- Identifying and explaining Applicable OHS legislative requirements relevant to own work, role and responsibilities
- Identifying duty of care requirements
- Identifying and explaining Own responsibilities to comply with safe work practices

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Identify applicable OHS legislative requirements relevant to own work, role and responsibilities
- Explain applicable OHS legislative requirements relevant to own work, role and responsibilities
- Identify duty of care requirements
- Identify Own responsibilities to comply with safe work practices
- explain Own responsibilities to comply with safe work practices

Learning Instructions:

1 Read the specific objectives of this Learning Guide.
2 Follow the instructions described below.
3 Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4 Accomplish the “Self-checks” which are placed following all information sheets.
5 Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6 If you earned a satisfactory evaluation proceed to “Operation sheets
7 Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8 If your performance is satisfactory proceed to the next learning guide,
9 If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1- Identifying OHS legislative requirements

1.1 Identifying and explaining Applicable OHS legislative requirements relevant to own work, role and responsibilities

Address OHS legislation, regulations and codes of practice The Commonwealth, states, and territories have all enacted legislation that establishes general duties for workplace parties to ensure healthy and safe working conditions. The OHS legislative regime consists of principal OHS Acts that codify the duty of care under common law, underpinned by more detailed requirements set out in regulations. Codes of practice provide practical guidance to duty holders on how to achieve the standard of health and safety required in the Act and regulations. Codes of practice should be followed unless there is another way to get an equal or safer outcome.

Fulfill the duty of care for those in the workplace

A duty of care is set out in all OHS Acts and places a requirement on employers to provide:

- A working environment that is safe and without risks to the health of employees; adequate training,
- information and supervision to ensure the health and safety of employees; and
- A consultation processes with employees on OHS issues. Under OHS Acts, employees also have a duty of care in relation to occupational health and safety.

Generally, they must take reasonable care of their own health and safety and that of others in the workplace, to the extent to which they are capable. There are also duties for designers, manufacturers and self-employed persons. The relevant State and territory or Commonwealth OHS act should be consulted to ascertain the exact duties set down for various parties in the workplace.

Identify hazards, assess and control risks

In order to provide a healthy and safe work environment, the duty holder should set out a process to:

Identify hazards – What hazards are present in the workplace?

Assess risks – What is the possible frequency and severity of injury or disease that may result from the identified hazards?

Control risks – How can the risk be eliminated or minimized?

The process to identify, assess and control should be the basis of all prevention activities in the workplace. To be most effective, this process should be done within appropriate participative procedures as described below. In each jurisdiction there are regulations that prescribe duties in regard to hazard identification, risk assessment and risk control. In some cases, the regulations prescribe: when identification and assessment must be carried out in relation to specific hazards; and the interval between, and criteria for, assessment and re-assessment. Relevant occupational health and safety legislation and regulations should be consulted in the development of any training materials to ascertain regulatory requirements for hazard identification, risk assessment and risk control. The most effective approach to controlling risks at work is based on the hierarchy of control. This hierarchy recognizes that the best controls act on the environment, not on the people in it.

Contribute to participative procedures for OHS management

Effective occupational health and safety management relies on using the skills and knowledge of everyone in the workplace. OHS laws support the establishment of consultative mechanisms to address occupational health and safety.

In all jurisdictions the employer has obligations and responsibilities to consult with employees and their representatives over OHS matters. Consultation in small organizations may consist of ongoing discussion and review of OHS issues with all staff, whereas larger organizations may require health and safety representatives and occupational health and safety committees. Regardless of the legal form of consultation required, everyone in the workplace from the senior manager to the newest employee must have the opportunity to contribute to occupational health and safety management if the best outcomes are to be achieved.

Hazards -the following examples identify some common hazards and suggest potential solutions for addressing related OHS competencies.

Machine operation- machine operators need specific competencies to identify the hazards of the machinery they operate. Such competencies may include the ability to determine whether the machine is adequately guarded, to implement preventive maintenance procedures or to communicate with operators on other shifts to identify the cause of particular operating problems.

Hazard identification-workers may need to be able to identify tasks, work locations and occupations that involve manual handling hazards.

For example, first aid responsibilities, especially in larger workplaces, may involve the employment of specialist personnel, such as an occupational health and safety officer. Alternatively, specialized occupational health and safety duties may form part of the broader job description of an employee. Depending on the nature of the OHS-specific function or work role, OHS skills and knowledge may require coverage in a full qualification or skills set. Whilst Training Package developers may need to develop units of competency related to specialized OHS functions, existing qualifications and units of competency should be investigated as a first priority.

Self-check 1	Written test

Name…… ID…… Date…….

Test I: Choose the best answer (2 point each)

1. Which one of the following shall be fulfill in the workplace

A. a working environment must be safe

B. information is given to new workers

C. controlling hazard

D. all

2. Which one of the following is recommended if an employee fall from a ladder

A. run away from him

B. gives first aid

C. Refrain from him

D. all

3. Hazard evaluation technique is selected based on

A. hazard evaluation strengths

B. Hazard evaluation weaknesses.

C .none of the above

D.A&B

Note: Satisfactory rating > or = 3 points **Unsatisfactory - below 3 points**

Score----------
Rating----------

Information Sheet 2- Identifying OHS legislative requirements

2.1. Identifying duty of care requirements

What is a duty of care?

Although the term ‘duty of care’ can seem a little alien at first, it can roughly be thought of as the responsibility of an individual to not harm others through carelessness.

Duty of care requirements:

Relate to the legal responsibility under “duty of care” to do everything reasonably practicable to protect others from harm.

Relate to relevant State OHS requirements and may include employers and self employed persons, persons in control of the work site, construction supervisors, designers, manufacturers and suppliers, construction workers, sub-contractors and inspectors.

Principles of risk management include:

- Identify hazards
- Assess the risks involved
- Consult and report ensuring the involvement of relevant workers
- Control the hazard
- Review to identify change or improvement.

Hazard relates to: Anything (including an intrinsic property of a thing) or situation with the potential to cause injury or harm.

Common hazards may include:

- Manual handling
- Hazardous substances and dangerous goods
- Noise
- UV radiation
- Electrical safety
- Traffic and mobile plant
- Working at heights
- Falling objects
- Excavations (including trenches)
- Confined spaces
- Unplanned collapse
- Hot and cold working environments
- HIV and other infectious diseases.

Measures for controlling risk eliminate or minimize hazards in accordance with the hierarchy of control including**:**

- Elimination
- Substitution
- Isolation
- Engineering control
- Administrative control
- Personal Protective Equipment

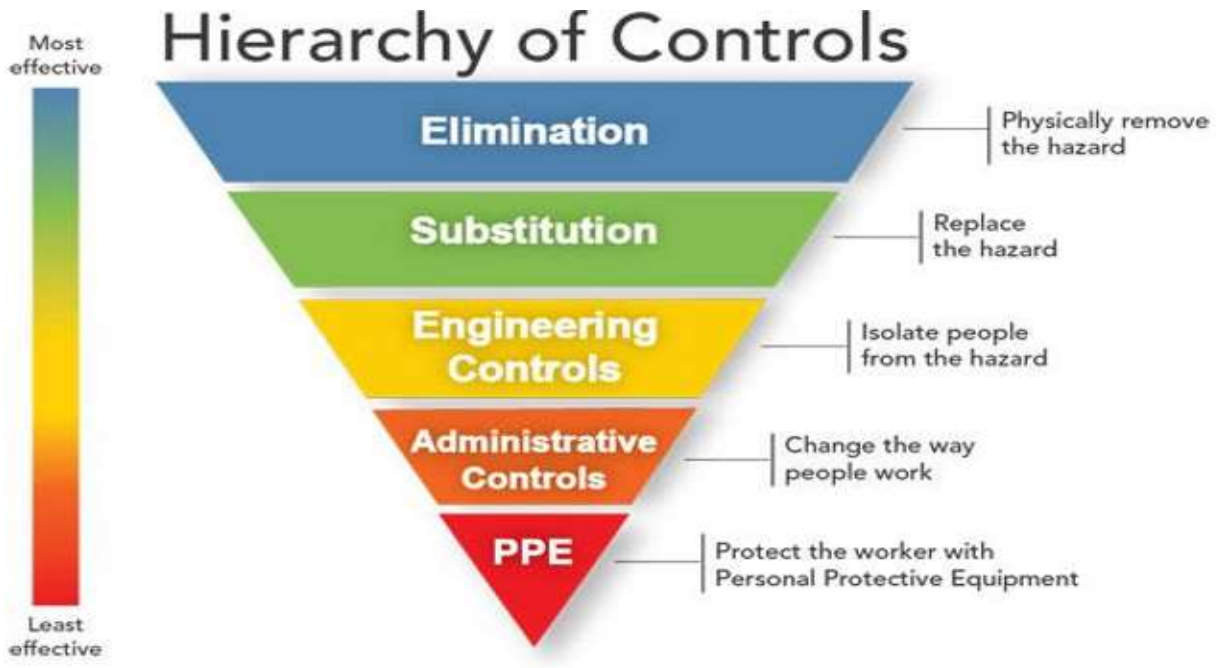

Fig 1 steps to control risk

SITE PREPARATIONS: Preparation of a construction site is an important aspect which should focus on a good site layout, easy access to the site and easy movement of vehicles in the site. Site Layout: A badly planned and untidy construction site can lead to many accidents at construction sites, which may arise from:

(i) Fall of materials

(ii) Collision between the workers

(iii) Plant or equipment. To avoid the above causes of accidents, a good layout of the site is a must. While preparing the site layout, at-most care should be taken to avoid overcrowding the site. Also enough space should be provided for the movement of men, material and construction equipment within the site. Movement of Vehicles: It is a common sight on the construction site that many vehicles (trucks, cranes, forklifts, etc.) carrying construction materials move crises-cross on the construction site, which results in a number of accidents and mishaps. Construction sites often operate on ground, which is muddy and uneven, and where driver visibility is poor. People walking on the site are injured or killed by moving vehicles especially reversing ones. Many workers, particularly drivers and operators are killed by overturning vehicles. Hence, almost care should be taken for the movement of vehicles on the construction sites. The following points should be taken into consideration, while moving the vehicles on the construction site: Vehicles and pedestrians should be kept apart on site, i.e. separate them as much as possible using barriers. Adequate clearance should be provided around vehicles. As far as possible, avoid reversing the vehicles. It is better to use one-way system. Vehicles used on the sites must have reversing alarms/sirens.

Site operations: The type of operations/activities carried out in a construction site is varying from site to site. However, all of them should be carried out only with due regard to safe operations. Some of the routine work/operations carried out in construction sites are listed below:

- Excavation Work
- Scaffolding Work
- Crane Operations
- Hoisting Operations
- Forklift Operations
- Ladder Safety
- Electrical Safety

Fig 2-a typical view of a construction site

Excavation Work: Excavation work is an important activity in the construction sites. However, many fatal accidents do occur in excavation work, if proper precautions are not taken. Many lives are lost being buried alive in the trenches. It should be remembered here that there is no safe ground that will not collapse and therefore, any

trench sites can collapse without any warning. All excavation work deeper than 1.25 meters must be shored or battered. Excavation deeper than 2 meters must be guarded by rails or barriers. Vehicles working, too close to the side of the trench or rubble piled on the sides may cause collapse and therefore at most care should be taken. Vehicles tipping into the excavation work must use stop blocks, so as to avoid the collapse of the trench. Make sure that the excavation work is inspected daily. Make sure that you know where the position of underground pipes and electric cables are laid in the site, so that you will not hit them during the excavation work.

Scaffolding Work: Scaffolds are temporary structures of steel work, timber or bamboo. The criteria for their erection are the same as those for permanent structures. The strength of the scaffolding depends upon the combined strength of individual members. Failure of one or two of them can result in the collapse of the entire structure. Modern scaffolds are invariably made of steel tubes, pre-fabricated in convenient units.

They are safer and turn out good quality work. Of course, the steel scaffolds are too costly, but, it would be cheaper in the long run. In spite of the fact that the steel scaffolds are much safer, many of the smaller and medium size builders in India neglect the safety aspects and prefer to use timber or bamboo scaffolds (See Fig.02) in order to cut the cost. In any case, while erecting the scaffolds, the workers should be forced to wear necessary safety belts with fall arrestors and helmets, so that the fall accidents can be avoided.

Fig 3-a typical view of scaffolding

Crane Operations: Various types of cranes are used in construction sites, which includes

(i) **Portable cranes**

(ii) Tower cranes a number of accidents are reported in the use of cranes and many of them could be averted by adopting safe methods of operations. Some of the methods to be adopted for safe crane operations are given below: The weight of the load intended to be lifted by the crane must be carefully estimated. The crane must be fitted with an automatic safe load indicator. The crane must always work on a hard, level base. The load must be properly fixed and secured. The signal man must be trained to give clear signals. The ropes, hooks, chains, slings, etc. used in the lifting operations, must be inspected regularly for their worn out. When mobile cranes are used, care must be taken to prevent overturning of cranes. Wear appropriate personal protective equipment.

Fig-4 Demonstration of a typical mobile crane in operation

Fig-5 a typical view of tower cranes

Fig 5-Right way of using a ladder

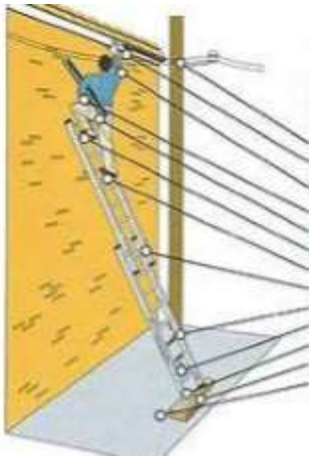

Fig 6-Wrong way of using a ladder leads to risk

Electrical Safety: Electricity can cause great damage to both people working in the construction sites and property. Contact with the electric current can trigger other accidents, like falls from ladders or scaffolding. Electrical shocks or flashes can cause serious injuries such as burns. Electric shock may also cause the victim to stop breathing and nerve centers may be temporarily paralyzed. The heart beat may fluctuate or the heat rhythm may actually be interrupted, thus causing a stop in the circulation of blood throughout the body. Apart from human injuries like shock, burns or falls, another major hazard is the situation in which an electrical fire or explosion may occur. Fires and explosions generally cause extensive property & equipment damage. Electrical Fires often start when an overloaded circuit becomes overheated – igniting the insulation around the wires. If cords and cables are frayed or worn out, bare wires might touch each other, thus causing a short circuit that could spark a fire

Safety signs and symbols may include:

Regulatory signs (e.g. prohibition, mandatory and limitation or restriction)

Hazard signs (danger and warning)

Emergency information signs (exits, equipment, first aid)

Fire signs (location of fire alarms and firefighting equipment)

Safety tags and lockout (danger tags, out of service tags

Personal Protective Equipment may include:

- Protective, well fitting clothing
- Arm guards
- Aprons
- High visibility retro reflective vests
- Safety footwear
- Hard hat
- Eye protection
- Hearing protection
- Gloves
- Respiratory protection
- UV protective clothing and sunscreen.

Fire safety equipment may include:

- Firefighting equipment
- Fire blankets
- Breathing apparatus

Self-check 2	Written test

Name…… ID…… Date…….

Test I: Choose the best answer (3 point each)

1. Which one of the following is fire safety equipment?

A. Fire blankets

B. Breathing apparatus

C. gasses

D. An A&B

2. Which one the following is the main assumption or target of Safety signs and symbols

A. prohibition

B. danger and warning

C. A and B

D. all

3. The routine work/operations carried out in construction sites are

A. Scaffolding Work

B. Ladder Safety

C. Crane Operations

D. all

Note: Satisfactory rating > or =4.5 points **Unsatisfactory - below 3 points**

Score----------
Rating----------

Information Sheet 3- Identifying and explaining own responsibilities to comply with safe work practices

3.1. Identifying and explaining own responsibilities to comply with safe work practices

Personal protective equipment (PPE):

Personal protective equipment means any equipment which is intended to be worn or held by a person at work and which protects him against one or more risks to his health or safety and any additional accessory designed to meet that objective;

PPE is usually chosen to provide protection appropriate to each of type of hazard present. There are specifications for the types of PPE used for protecting an individual's head, eyes, footwear, limb and body, fire retardant clothing, respiratory, hearing, and personal flotation devices.

It may also include required apparel for example when traffic hazards are present high visible and distinguishable "vests must be worn"

Personal Protective Equipment (PPE) and clothing is used when other controls measures are not feasible and where additional protection is needed. Workers must be trained to use and maintain equipment properly. The employer and workers must understand the limitations of the personal protective equipment. The employer is expected to require workers to use their equipment whenever it is needed. Care must be taken to ensure that equipment is working properly. Otherwise, PPE may endanger a workers' health by providing an illusion of protection.

Under the WHS legislation every worker has the right to a safe workplace that is, so far as reasonably possible, free of risk or harm to the worker's health and safety. In accordance with WHS laws, employers and workers have a duty of care to ensure their own safety and the safety of others while working in a home-based environment. This can often be challenging when a person receiving care has a right to choose how they live and behave within the safety of their own home. For example a person may usually smoke in their home, leave dirty dishes on the tables and entertain visits from intoxicated family members. However, under WHS legislation if a person enters into an agreement where they receive care within their own home, then they are agreeing to comply with reasonably the standard infection control precautions that follow should be used in every home based environment where services are provided.

Standard infection control precautions

- Effective hand hygiene
- Use of PPE
- Use of aseptic techniques
- Safe management of sharps
- Maintain a clean physical environment
- Clean reusable items after each use
- Implement respiratory precautions
- Handle and dispose of waste materials appropriately

Minimize injury to self and clients

Injuries in the home-based environment can occur to both the care support worker and those receiving care as a result of hazards present in the home-based environment. These hazards may be due to physical environment, the nature of tasks being performed or as a result of the behavior of the people involved. All care support workers have a duty of care to participate in hazard identification, risk assessment and risk control processes to minimize the risk of injury to themselves and those receiving their care. Here is a sample hazard checklist that may be used to assess in the home-based environment to reduce the risk of injury to both workers and those receiving care.

Follow workplace policies and procedures to minimize risk

All workplaces have their own policies and procedures for dealing with an emergency or hazard, and for controlling risks. An emergency can be any hazard or risk that requires immediate action; for example, a chemical spill, a fire or a serious injury or illness. Emergencies can occur in the workplace and it is very important that you understand what to do if an emergency happens, and how hazards and risks can be reduced or controlled. This includes understanding safety symbols and their meanings, using emergency equipment and PPE and knowing how to manage the risks associated with specific workplace hazards.

Safety signs and symbols: emergency equipment

Emergency equipment signs and symbols inform workers about important emergency information regarding the location of emergency equipment such as evacuation mats, first aid kit and defibrillators, showering devices and breathing apparatuses. The words and pictures on these signs will always be white on a green rectangular background.

Figure-1.first aid symbol

Safety signs and symbols: PPE

Signs and symbols that contain images of personal protective equipment indicate the location of important protective equipment that must be worn in the area where the sign is located. These symbols will always be white on a blue circular background and may include the following depictions:

- Use of goggles or protective eye wear
- Use of a face mask or shield
- Use of gloves

Figure 2-saftey eye goggle

Safety signs and symbols: specific hazards

The community service environment may also use signs to indicate specific hazards that may cause harm to a person if they don't take appropriate notice or action. Warning signs should always have a black symbol on a yellow triangular back ground. These signs may or may not have words depending on the hazard. Examples of hazard signs found in the community service environment include:

- flammable materials
- hazardous chemical
- biological hazards
- biohazard sharps receptacle
- blood borne pathogen kit
- radiation
- Toxic hazard

Self-check 3.	Written test

Name…… ID…… Date…….

Test I: Choose the best answer (3 point each)

1. Which one of the following is community service hazard sign indicator?

A. flammable materials B. hazardous chemical

C. Toxic hazard D. all

2. Why we put safety signs and symbols at work place

A. to inform workers about important emergency information

B. for decorative

C. to make it afraid able

D. all

3. Which one of the following is an emergency hazard which requires immediate Solution

A. chemical spill

B. fire

C. Serious injury

D. all

Note: Satisfactory rating > or = 5 points Unsatisfactory - below 4 points

Score----------
Rating----------

LG #46	LO#2 Identify construction hazards and control measures
Instruction sheet	

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying Basic principles of risk management
- Identifying and discussing Common construction hazards at construction site
- Identifying measures for controlling hazards and risks

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Identify Basic principles of risk management.
- Identify Common construction hazards
- Discuss Common construction hazards.
- Identify measures for controlling hazards and risks

Learning Instructions:

1. Read the specific objectives of this Learning Guide.

2. Follow the instructions described below.

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4. Accomplish the “Self-checks” which are placed following all information sheets.

5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

6. If you earned a satisfactory evaluation proceed to “Operation sheets

7. Perform “the Learning activity performance test” which is placed following “Operation sheets”

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9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1- Identifying Basic principles of risk management

1.1. Identifying Basic principles of risk management

In industrial arena, if any industry to be successful, it has to be safe, reliable, and sustainable in its operations. The industry has to identify the hazards and assess the associated risks and to bring the risks to tolerable level.

Hazard Identification and Risk Assessment (HIRA) is carried for identification of undesirable events that can lead to a hazard, the analysis of hazard of this undesirable event, that could occur and usually the estimation of its extent, magnitude and likelihood of harmful effects. It is widely accepted within industry in general that the various techniques of risk assessment contribute greatly toward improvements in the safety of complex operations and equipment.

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As the part of the work Hazard identification and risk analysis was carried out for construction activities and the hazards were identified and risk analysis was carried out. The different segments of activities were divided in to high, medium and low depending upon their consequences and likelihood. The high risks activities have been marked in red color are un-accepted and must be reduced. The risks which are marked in yellow color are tolerable but efforts must be made to reduce risk without expenditure that is grossly disproportionate to the benefit gained. The risks which are marked in green have the risk level so low that it is not required for taking actions to reduce its magnitude any further.

The objective of this work of hazards and risk analysis is to identify and analyze hazards, the event sequences leading to hazards and the risk associated with hazardous events. Many techniques ranging from the simple qualitative methods to the advanced quantitative methods are available to help identify and analyze hazards. The use of multiple hazard analysis techniques is recommended because each has its own purpose, strengths, and weaknesses.

Hazard identification and risk analysis (HIRA) is a collective term that encompasses all activities involved in identifying hazards and evaluating risk at facilities, throughout their life cycle, to make certain that risks to employees, the public or the environment are consistently controlled within the organizations risk tolerance level. These studies typically address three main risk questions to a level of detail commensurate with analysis, objective, life cycle stage, available information, and resources.

At each stage in the work life cycle, a review team questions process experts about possible hazards and judges the risk of any hazards that are identified. Several common methods exist for questioning a design, ranging from simple qualitative checklists to complex quantitative fault tree analysis. The result of the review process is typically documented in a worksheet form, which varies detail, depending on the stage of the work and the evaluation method used. Risk studies on operating processes are typically updated or revalidated on a regular basis. Reduce the risk assessment (HIRA). Industry becomes successful by not only meeting the production requirements but also should have high employee satisfaction by providing the safety requirements in the workplace. The Hazards and risk assessment should be done and actions to be taken to convert the risk to a tolerable level on regular basis.

Fig. HIRA Process

HIRA Process it consist of four steps as follows:

I. Hazard identification

II. Risk assessment

III. Risk analysis

IV. Monitor and review

The objective of this work of hazards and risk analysis is to identify and analyze hazards, the event sequences leading to hazards and the risk associated with hazardous events. Many techniques ranging from the simple qualitative methods to the advanced quantitative methods are available to help identify and analyze hazards. The use of multiple hazard analysis techniques is recommended because each has its own purpose, strengths, and weaknesses.

The effectiveness of Risk Management strongly depends on the degree to which it succeeds in becoming a part of an organization's culture, i.e. its philosophy, practices and business processes. In this way, Risk Management is the responsibility of everyone in the organization.

The design and implementation of a Risk Management process in a particular organization is always influenced by:

- The organization mission and objectives;
- Its products and services;
- Its management and operation processes;
- Specific practices employed;
- The local physical, environmental and regulatory conditions.

Risk Communication - A process to exchange or share information about risk between the decision-maker and other stakeholders inside and outside an organization (e.g. departments and outsourcers respectively)

Risk Assessment **-**Every organization is continuously exposed to an endless number of new or changing threats and vulnerabilities that may affect its operation or the fulfillment of its objectives. Identification, analysis and evaluation of these threats and vulnerabilities are the only way to understand and measure the impact of the risk involved and hence to decide on the appropriate measures and controls to manage them.

Identification of Risks **-** This is the phase where threats, vulnerabilities and the associated risks are identified. This process has to be systematic and comprehensive enough to ensure that no risk is unwittingly excluded. It is very important that during this stage all risks are identified and recorded, regardless of the fact that some of them may already be known and likely controlled by the organization.

Analysis of relevant Risks**-**Risk analysis is the phase where the level of the risk and its nature are assessed and understood. This information is the first input to decision makers on whether risks need to be treated or not and what is the most appropriate and cost-effective risk treatment methodology. Risk analysis involves:

- Thorough examination of the risk sources;
- Their positive and negative consequences;
- The likelihood that those consequences may occur and the factors that affect them

Self-check 1	Written test

Name…… ID…… Date…….

Test I: Choose the best answer (2 point each)

1. Why we analysis hazard and risk

A. to identify sequences leading to hazards and the risk

B. technically competent people to evaluate

C. adequate, up-to date information

D. none

2. Which one of the following is source of information to identify hazard

A. Accident investigation

B. Safety audits

C. Workplace inspections

D. all

3. Design and implementation of a Risk Management process influenced by

A. The organization mission and objectives

B. Its management and operation processes

C. The local physical, environmental and regulatory conditions

D. all

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------
Rating----------

Information Sheet 2- Identifying and discussing Common construction hazards at construction site

2.1. Identifying and discussing Common construction hazards at construction site

The Three Main Causes of Fatalities in Construction

There are three main causes of fatalities due to workplace hazards in the construction industry. They are working at height, the interaction between people and moving mobile plant, and working and coming into contact with electricity.

1. Working at Height

A fall hazard is anywhere a person could fall from one level to another. Although fall hazards are more obvious in multi-story construction they are common on most construction sites. The height of a fall is not the only thing you should consider, e.g. you may survive a 2-metre fall onto the sand without any injury, but not survive a 1-metre fall onto a star picket

Falls from height fatalities were 28% of all deaths in 2013-14. Of the fatalities caused by falls from height, 58% were from roofs and ladders. 50% of these involved falls of less than 4m.

What should be done to prevent falls from one level to another?

The construction industry is aware of the risks that working at height introduce and have some significant measures in place to reduce these risks.

Edge protection which incorporates a guard rail, mid-rail and toe board must be provided to the edge of any scaffold platform, fixed stair, landing, suspended slab, formwork, or false work where there is a risk of a person falling two or more meters.

Edge protection should be provided where there is a risk that a person could fall three or more meters from an edge at the workplace other than an edge referred to in point 1 above.

Where it is not practicable to provide edge protection as outlined in point 2 above then a fall injury prevention system should be provided and used to control the risk of a fall or a fall arrest system used to arrest a fall.

2. Interaction with Mobile Plant

Maintaining effective exclusion zones between workers on foot and operating mobile plant is not only a challenge for construction companies but many other industries. Many workplaces use mobile plant such as forklifts and cranes. However, in the construction industry, this extends to larger machines, including excavators, diggers, loaders, trucks, rollers, water carts, and so on.

What should be done to prevent interaction with mobile plant?

When operating mobile equipment, you must be constantly aware of surrounding powered mobile plant and operators on foot. All mobile plant has blind spots or vision shadows. In respect of large powered mobile plant, you need to recognize that the operator's view of other powered mobile plant or pedestrians may be restricted or even obscured by the machine itself.

If a worker is required to enter the plant operating zone to talk with the operator, then the powered mobile plant must be temporarily halted. Workers must:

Make positive communication with the plant operator;

Lower all ground engagement tools or implements to the ground;

Disengage the plant controls to ensure inadvertent engagement cannot occur either directly by the operator or otherwise;

Visibly remove their hands from the powered mobile plant's controls; and

Cease any motion of the plant.

3. Coming Into Contact With Electricity

Working in and around electricity creates significant workplace hazards in the construction industry. The industry uses electrical equipment and powered tools. These tools can be damaged and incur frayed leads.

What should be done to prevent coming into contact with electricity?

Damaged power tools should be tagged out of service and no longer used until repaired or replaced.

There are many times those powers lines encroach working spaces mainly when mobile cranes are in use or scaffold is erected. Establish power line corridors and do not breach minimum clearances. Activities that are at risk include:

Drilling, excavating, loading, hauling, or dumping

The construction, fabrication, maintenance or storage of buildings, structures, machinery, and equipment

Operation of vehicles or machinery with elevating parts that do not afford the required clearance when fully raised

When lifting near overhead power lines, a minimum 6m safe distance must be maintained. If the crane boom is required to move closer to the power lines, then a Spotter must be in place to ensure that the boom remains a minimum of 3m away.

Use positive confirmation that de-energizing has occurred before erecting scaffolds that are close to live lines. Scaffolds constructed of timber or other non-conductive materials should not be closer than 1.5 m to power lines and scaffolds with metallic components should not be closer than 4m.

Ladder Safety: Ladders are one of the most popular items used in the construction sites for working at heights. However, if not used safely, it can kill a lot of people. The following safe methods should be adopted while operating ladders:

Always have a firm grip on the ladder and keep a good balance.

Never allow more than one person on a ladder.

Use tool belts or hand line to carry objects when you are climbing the ladder.

Do not lean out from the ladder in any direction.

If you have a fear of heights – don't climb a ladder.

Do not allow others to work under a ladder in use.

Do not use a defective ladder.

Electrical Safety: Electricity can cause great damage to both people working in the construction sites and property. Contact with the electric current can trigger other accidents, like falls from ladders or scaffolding. Electrical shocks or flashes can cause serious injuries such as burns. Electric shock may also cause the victim to stop breathing and nerve centers may be temporarily paralyzed.

Self-check 2	**Written test**

Name…… ID…… Date…….

Test I: Choose the best answer (2 point each)

1. Which one of the following is the cause of fatalities in Construction

A. working at height

B. working and coming into contact with electricity

C. interaction between people and moving mobile

D. all

2. Which one of the following is correct about a worker and plant operating zone to talk with the operator

A. Make positive communication with the plant operator

B. Visibly remove their hands from the powered mobile plant's controls

c. Cease any motion of the plant

D. all

3. Which one of the following activity has risk most probably?

A. maintenance or storage of buildings

B. excavating

C .none

D.A&B

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------
Rating----------

Information Sheet 3- Identifying measures for controlling hazards and risks

3.1. Identifying measures for controlling hazards and risks

The purpose of this guideline is to provide a systematic and objective approach to assessing hazards and their associated risks that will provide an objective measure of an identified hazard as well as provide a method to control the risk. It is one of the general duties as prescribed under the Occupational Safety and Health Act 1994 (Act 514) for the employer to provide a safe workplaces to their employees and other related person.

Risk is something that we as individuals live with on a day-to-day basis. People are constantly making decisions based on risk. Simple decision in daily life such as driving, crossing the road and money investment all imply an acceptance risk. Risk is the combination of the likelihood and severity of a specified hazardous event occurring.

To identify all the factors that may cause harm to employees and others (the hazards);

To consider what the chances are of that harm actually be falling anyone in the circumstances of a particular case and the possible severity that could come from it (the risks); and

To enable employers to plan, introduce and monitor preventive measures to ensure that the risks are adequately controlled at all times.

HIRA activities shall be plan and conducted.

Process of HIRA requires 4 simple steps:

Classify work activities;

Identify hazard;

Conduct risk assessment (analyze and estimate risk from each hazard), by calculating or estimating -

Likelihood of occurrence, and Severity of hazard;

Decide if risk is tolerable and apply control measures (if necessary).

Flow chart for HIRA process

Hazard-means a source or a situation with a potential for harm in terms of human injury or ill health, damage to property

The hazard identification and assessment methodology

The hazard identification and assessment methodology shall include:

Steps and time frame for identifying and assessing the hazards. One must define the steps for the identification of hazards and a time frame for this identification. The following information should be included:

Who will be responsible for the identification: for example, it may be the work place health and safety committee, or an individual or individuals appointed. by the committee

The way in which the identification reports are processed: for example, they may be compiled and processed by the committee, or by individuals appointed by the committee: The identification time frame.

The keeping of a record of the hazards

After having identified the hazards, one must establish and maintain an identification record, either in print or electronic format.

A time frame for reviewing and, if necessary, revising the methodology The date for the review of the identification: for example, the review of the identification method will be carried out every three years. To complete hazard identification, one can use techniques to identify hazards. Some examples of techniques include, but are not limited to:

Self-check 3	**Written test**

Name…… ID…… Date…….

Test I: Choose the best answer (2 point each)

1. Who have most responsibility at workplace to provide safe workplaces to their employees and other related person

A. employer

B. worker

C. laborer

D. none

2. ----------is the combination of the likelihood and severity of a specified hazardous event occurring

A. safety

B. risk

C. hazard

D. all

3. in hazard identification and risk analysis process which comes first

A. classify work activities

B. consultation

C .control

D. all

Note: Satisfactory rating > or = 3 points **Unsatisfactory - below 3 points**

Score----------
Rating----------

LG #47	**LO#3 Identify OHS communication and reporting processes**
Instruction sheet	

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying and discussing OHS communication processes, information and documentation
- Identifying and explaining Role of designated OHS personnel
- Identifying and explaining Safety signs and symbols
- Identifying procedures and relevant authorities for reporting hazards, incidents and injuries.

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Identify OHS communication processes, information and documentation
- discuss OHS communication processes, information and documentation
- Identify role of designated OHS personnel
- Explain role of designated OHS personnel
- Identify Safety signs and symbols
- Explain Safety signs and symbols
- Identify procedures and relevant authorities for reporting hazards, incidents and injuries

Learning Instructions:

1. Read the specific objectives of this Learning Guide.

2. Follow the instructions described below.

3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.

4. Accomplish the “Self-checks” which are placed following all information sheets.

5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

6. If you earned a satisfactory evaluation proceed to “Operation sheets

7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,

8. If your performance is satisfactory proceed to the next learning guide,

9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”

Information Sheet 1- Identifying and discussing OHS communication processes, information and documentation

1.1. Identifying and discussing OHS communication processes, information and documentation

Communicating procedures

OHS procedures need to be communicated:

- as part of implementing new procedures;
  - As ongoing refresher and reinforcement for current employees;
- To inform new personnel

Strategies for communicating the procedures will usually involve both formal and informal communication processes.

Formal processes may include: newsletters, memos, posters;

- Employee meetings;
- Tool box meetings training sessions including induction

Informal processes are generally verbal interaction between workers, health and safety representatives, supervisors and managers. Such interactions may occur at any time, such as during and before or after meetings, in general conversations and during manager 'walk through'. What is often not considered in informal communication processes are the non-verbal communication messages – body language and actions that may be linked with the requests for communication or rising of OHS concerns.

An effective safety information system is not only vital for enabling an informed culture but it also facilitates a reporting and just culture which are important in enabling people to request OHS information and raise OHS issues in a 'safe' environment. Thus a communication strategy for informing people of the procedures for requesting information and raising concerns must address:

- initial introduction of new procedures;
- Maintenance of procedures in refresher training for existing personnel
- Personnel; and new employees, contractors and visitors

And considers nature of the work group (language, literacy, preferred types of communication); organization of the workgroup (workforce and reporting Structure, shift arrangements, location); and organization culture

Use formal and informal communication processes to provide

Information

Formal and informal communication processes may involve written communication and oral communication. Overlaying both of these are the accompanying non-verbal communication processes.

Oral communication

Is the ability to explain and present ideas in clear English, to diverse audiences?

This includes the ability to tailor the delivery to a given audience, using appropriate styles and approaches, and an understanding of the importance of non-verbal cues in oral communication. It may involve informal discussion, interviews, meetings and formal presentations, as well as video presentations, teleconferencing and video-conferencing.

Written communication

Is the ability to write effectively in a range of contexts and for a variety of different audiences and purposes, with a command of the English language? This includes the ability to tailor writing to a given audience, using appropriate styles and approaches. It includes emails, letters, minutes, memos, formal and informal reports as well as newsletters and notice boards.

It may also encompass electronic communication such as SMS, discussion boards, chat rooms and instant messaging.

Non-verbal communication

Is the ability to enhance the expression of ideas and concepts without the use of coherent labels, through the use of body language, gestures, facial expression and tone of voice.

Hazard reports may include:

- Maintenance requests and reports
- Reports on completion of inspections
- Incident reports
- Reports of non-compliance with work procedures
- Reporting on progress of action plans.

Self-check 1	Written test

Name…… ID…… Date…….

Test I: Choose the best answer (2 point each)

1. why OHS procedures need to be communicated

A. when in need to implementing new procedures

B. to refresher and reinforcement for current employees

C. To inform new personnel

D. all

2. which one of the following is formal communication process

A. newsletter

B. memos

C. Employee meetings

D. all

3. Which of the following is part of hazard report

A. Maintenance requests

B. completion of inspections

C. progress of action plans.

D. all

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------
Rating----------

Information Sheet 2- Identifying and explaining role of designated OHS personnel

2.1. Identifying and explaining role of designated OHS personnel

Workers must: take reasonable care for their own health and safety. Take reasonable care for the health and safety of others who may affect by their acts or omissions not 'intentionally or recklessly interfere with or misuse' anything provided at the workplace forums.

Who are the designated personnel in a workplace?

- Group of employees that perform similar jobs or have similar occupational health and safety concerns. There can be more than one in workplace include employees of an employer at one or more workplaces.

Our responsibilities as an employer include**:**

- Fair recruitment practice.
- Written particulars of employment (usually in the form of a contract)
- Health and Safety.
- Working Time Regulations and Holiday.
- Minimum Wage.
- Fair treatment which prevents claims of discrimination.
- Your duty to consider requests for flexible working.

Health and Safety Committees the forum to look at wider workplace issues, such as development of policies, training programs, review of the maintenance schedule, employment of consultants, and so on.

Designated persons may include

- Designated health and safety officers
- Health and safety representatives
- Supervisors
- Managers
- Team leaders
- Other persons authorized or nominated by the enterprise or industry

Self-check 2	**Written test**

Test I: Choose the best answer (2 point each)

1. Which one of the following is true about is true about designated personnel

A. Group of employees that perform similar jobs

B. has similar occupational health and safety concerns

C. having different goals

D.A&B

2. Which one of the following is the responsibility of designated personnel in the workplace?

A. Enacting Working Time Regulations and Holiday

B. Fair treatment which prevents claims of discrimination.

C. has no idea

D. A &B

3. Who has most responsibility look at wider workplace issues, such as development of policies, training programs, review of the maintenance schedule, employment of consultants, and so on.

A. employee

B. employer

C. Health and Safety Committee

D. all

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------

Rating----------

Information Sheet 3- Identifying and explaining Safety signs and symbols

3.1. Identifying and explaining Safety signs and symbols.

Safety signs must be used whenever a hazard or danger cannot be avoided adequately or reduced in another way. Before installing safety signs an employer should examine whether the hazard can be avoided or reduced by collective precautions (precautions that protect everybody) or safer ways of doing the work.

What colors and shapes should be used on safety signboards**?**

- Red for prohibition
- Yellow for caution
- Green for positive action
- Blue for mandatory actions

- O-Discs for prohibitions and instructions
- Δ-Triangles for warnings
- □-Squares and rectangles for emergency and information signs

Self-check 3	**Written test**

Name…… ID…… Date…….

Test I: Choose the best answer (2 point each)

1. ----- must be used whenever a hazard or danger cannot be avoided adequately or reduced

A. Safety signs

B. risk

C. ladder

D. all

2. Safety color which is red indicates

A. prohibition

B. caution

C. low effect

D. all

3. from the following who have responsible to OHS personnel

A. designated health and safety officers

B. Supervisors

C. Managers

D. all

Note: Satisfactory rating > or = 3 points **Unsatisfactory - below 3 points**

Score----------
Rating----------

Information Sheet 4- Identifying procedures and relevant authorities for reporting hazards, incidents and injuries

4.1. Identifying procedures and relevant authorities for reporting hazards, incidents and injuries

Hazard: something that has the potential to injure or harm people, property and equipment.

Incident: an event that has the potential to or does lead to an injury or damage to property and equipment as result of losing control of a hazard.

Incidents that must be reported include those that result in:

- death
- needing medical treatment within 48 hours of being exposed to a substance
- immediate treatment as an in-patient in a hospital
- immediate medical treatment for injuries, including for example amputation, serious head or eye injury, electric shock, serious lacerations.

Self-check 4	**Written test**

Name…… ID…… Date…….

Test I: Choose the best answer (3 point each)

1. the effect of hazard is

A. has the potential to injure or harm people

B. has the potential to harm equipment

C. has no effect

D. A&B

2. which one of the following incident must be reported

A. death

B. eye injury

C. injuries needing medical treatment within 48 hours of being exposed

D. all

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------

Rating----------

LG #48	LO#4 Identify OHS incident response procedures
Instruction sheet	

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Identifying and explaining general procedures for responding to incidents and emergencies
- Identifying procedures for accessing first aid
- Identifying and demonstrating Requirements for the selection and use of relevant personal protective equipment Identifying and discussing Fire safety equipment

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- identify and explain General procedures for responding to incidents and emergencies
- Identify procedures for accessing first aid.
- Identify and demonstrate requirements for the selection and use of relevant personal protective equipment.
- Identify and discuss fire safety equipment.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.

2. Follow the instructions described below.

3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.

4. Accomplish the “Self-checks” which are placed following all information sheets.

5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).

6. If you earned a satisfactory evaluation proceed to “Operation sheets

7. Perform “the Learning activity performance test” which is placed following “Operation sheets”

8. If your performance is satisfactory proceed to the next learning guide,

9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”

Information Sheet 1- Identifying and explaining general procedures for responding to incidents and emergencies

Information Sheet 1- Identifying and explaining general procedures for responding to incidents and emergencies

An incident is an event that results in or has the potential to result in harm or damage. This Procedure is to be followed in response to all injuries, near misses and exposure to hazards which pose a threat to persons, the environment or property of any type including plant and equipment.

Incident reporting and investigation are essential to achieve a healthy and safe work, learning and research environment for all staff, students, contractors and visitors. Comprehensive incident recording, investigation and reporting are fundamental to ensuring that adequate preventive action is taken following an incident.

All health and safety incidents must be reported both verbally to an appropriate manager and through the online Hazard/ Incident Reporting System as soon as possible. When the incident is considered serious, the notification is required immediately in person or by telephone to the appropriate manager, and the College Dean or the organizational unit Executive followed by a written report in the Incident Reporting System.

Incident or Hazard Response

(1) All employees must take immediate action(s) to minimize safety risks to persons, plant, equipment or the environment. This may include but is not limited to:

Obtaining first aid treatment or other assistance for any injuries;

Stopping work or other activities that are associated with the incident or hazard; and

Assessing the site and making it safe as far as practical or limiting exposure by withdrawing from the site.

(2) Where any incident has caused serious injury to a person or posed a serious threat, the site must be preserved without disturbance as far as possible, to enable a thorough investigation to be carried out.

Reporting and recording incidents is recognized as an important component in hazard control, risk management and incident prevention.

Self-check 1	Written test

Name…… ID…… Date…….

Test I: Choose the best answer (3 point each)

1. The effect of hazard is

A. has the potential to injure or harm people

B. has the potential to harm equipment

C. has no effect

D. A&B

2. Which one of the following incident must be reported

A. death

B. eye injury

C. injuries needing medical treatment within 48 hours of being exposed

D. all

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------

Rating----------

Information Sheet 2- Identifying procedures for accessing first aid

2.1. Identifying procedures for accessing first aid

First aid is defined as a case where a person will need:

• help from a medical practitioner or nurse

• Treatment for the purpose of preserving life and minimizing the consequences of injury and illness until such help is obtained

• Treatment of minor injuries which would otherwise receive no treatment or which do not need treatment by a medical practitioner or nurse.

Anyone who requires assistance having become injured or unwell should be assisted by the nearest available appointed person or trained first aider.

There are four stages to this procedure:

• Step one: Assessing first aid needs

• Step two: Fulfilling the first aid needs in the assessment

• Step three: First aid information and awareness

• Step four: Reporting

Self-check 2	**Written test**

Name…… ID…… Date…….

Test I: Choose the best answer (3 point each)

1. Which one of the following is not true about first aid

A. helps from a medical practitioner or nurse

B Treatment for the purpose of preserving life and minimizing the consequences of injury

C. has negative effect

D. A&B

2. Which one of the following comes first in the process of first aid

A. Reporting

B. First aid information and awareness

C. Fulfilling the first aid needs in the assessment

D. all

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------

Rating----------

Information Sheet 3- Identifying and demonstrating Requirements for the selection and use of relevant personal protective equipment

3.1. Identifying and demonstrating requirements for the selection and use of relevant personal protective equipment

PPE should be selected based primarily on the hazards identified during the assessment. However, employers should also take the fit and comfort of PPE in to consideration when selecting appropriate items for each employee PPE that fits well and is comfortable to wear will encourage employee.

PPE is equipment that will protect the user against health or safety risks at work. It can include items such as safety helmets, gloves, eye protection, high-visibility clothing, safety footwear and safety harnesses.

Eye protection for example, spectacles/goggles, shields, visors

Hearing protection – for example, ear muffs and plugs

Hand protection – for example, gloves and barrier creams.

Foot protection – for example, shoes/boots.

The order for removing PPE is Gloves, Apron or Gown, Eye Protection, Surgical Mask. Perform hand hygiene immediately on removal. All PPE should be removed before leaving the area and disposed of as healthcare waste.

Specific PPE may be required to be worn under particular circumstances. This may include but is not limited to:

Head protection; in the form of a safety helmet shall be worn where there is a possibility that a person:

– may be struck on the head by a falling object

– The person may strike their head against a fixed object

– is likely to have inadvertent head contact with an electrical hazard.

Full body protection where there is risk of dermal exposure to specific infection agents or hazardous chemicals

Eye protection / face shield where a risk of eye injury exists. Typical hazards might include flying particles, dust, splashing substances, harmful gases, vapors, aerosols, and high intensity radiation.

Hearing protection where a risk of noise induced hearing loss exists. The need for hearing protection shall be assessed from the conduct of noise monitoring surveys in potential noise hazard areas. Hand protection where there is an identified hazard with a potential for hand injury, transmission of infection or absorption of substances.

Self-check 3	**Written test**

Name…… ID…… Date…….

Test I: Choose the best answer (3 point each)

1. why we worn PPE in particular workplace circumstances

A. to protect struck on the head by a falling object

B. to protect eye from eye injury

C. to relax

D. A&B

2. From the following personal protective equipment which one is used to foot protection from any danger?

A. plugs B. boots

C. shoes D. c & B

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------

Rating----------

Information Sheet 4- Identifying and discussing Fire safety equipment

4.1. Identifying and discussing Fire safety equipment

Fire safety is the set of practices intended to reduce the destruction caused by fire. Fire safety measures include those that are intended to prevent ignition of an uncontrolled fire, and those that are used to limit the development and effects of afire after it starts.

Fire Safety Equipment to Keep in Your Home

- Carbon Monoxide
- Alarms.

Smoke Detectors and Smoke alarms are essential in detecting fires to give you and your family an early warning.

- Fire Extinguishers
- Fire Escape Ladders.

Smoke alarms have been saving people's lives for decades. A battery smoke alarm makes our list of the best fire safety equipment for home use because it acts as afire warning to residents. Once you know that a fire is taking place, you will be able to take measures to combat that fire or escape to safety.

Three types of extinguishing agents are typically used—carbon dioxide, dry chemical, and foam water for fires involving flammable liquids, greases, and oils. Carbon dioxide is a compressed gas agent that prevents combustion by displacing the oxygen in the air surrounding the fire.

Fire safety is the set of practices intended to reduce the destruction caused by fire. Fire safety measures include those that are intended to prevent ignition of an uncontrolled fire, and those that are used to limit the development and effects of a fire after it starts.

Fire safety measures include those that are planned during the construction of a building or implemented in structures that are already standing, and those that are taught to occupants of the building.

Some common fire hazards are:

- Kitchen fires from unattended cooking, grease fires/chip pan fires
- Electrical systems that are overloaded, poorly maintained or defective
- Combustible storage areas with insufficient protection
- Combustibles near equipment that generates heat, flame, or sparks
- Candles and other open flames
- Smoking (Cigarettes, cigars, pipes, lighters, etc.)
- Equipment that generates heat and utilizes combustible materials
- Flammable liquids and aerosols
- Flammable solvents (and rags soaked with solvent) placed in enclosed trash cans
- Fireplace chimneys not properly or regularly cleaned
- Cooking appliances - stoves, ovens
- Heating appliances - fireplaces, wood-burning stoves, furnaces, boilers, portable heaters, solid fuels

- Household appliances - clothes dryers, curling irons, hair dryers, refrigerators, freezers, boilers
- Electrical wiring in poor condition
- Leaking/ defective batteries
- Personal ignition sources - matches, lighters
- Electronic and electrical equipment
- Exterior cooking equipment - barbecue

Self-check 4	Written test

Name…… ID…… Date…….

Test I: Choose the best answer (2 point each)

1. Which one of the following is cause for fire hazard

A. Kitchen fires from unattended cooking

B. Electrical systems that is overloaded

C. Combustible storage areas with insufficient protection

D. all

2. Which one of the following is fire safety equipment to keep in Your Home as safety precaution?

A. Carbon Monoxide

B. Smoke Detector

C. Fire Extinguisher

3. ----------are essential in detecting fires to give you and your family an early warning

A. Smoke alarms

B. Smoke Detector

C. Fire Extinguisher

D. Carbon Monoxide

Note: Satisfactory rating > or = 3 points Unsatisfactory - below 3 points

Score----------

Rating----------

Operation sheet 1– Inspect the workplace for safety hazards

Procedure/steps to consider when conducting a workplace inspection

Step1: Planning the action to be taken

Step2: Physical Workplace Inspection

Step3: Writing reports

Step4: Follow up on recommendations.

Operation sheet 2**- Conducting incident investigations**

Procedure/steps to Conduct incident investigations

Step 1.Preserve/document the Scene.

Step 2. Collect Information

Step 3. Determine the Root Causes

Step 4.ImplementCorrectiveAction

Lap Test 1	**Demonstration**

Name……ID……..

Date…….

Time started: _____ Time finished: _____

Instructions: Given necessary templates and materials you are required to perform the following tasks within 1 hour. The project is expected from each student to do it.

During your work: You can ask all the necessary information's to do the operation

Lap Test Title: conduct workplace inspection

Task Objectives / Demands: in accomplishing activities required for this project the student will be able to:

Determine the safety requirements and measures in conducting a workplace inspection

Help to prevent incidents injuries and illnesses

help to identify hazards or processes that are not working efficiently and decide what measures to take before they lead to an accident or incident

Lap Test 2	**Demonstration**

Name……ID……..

Date…….

Time started: _____ Time finished: _____

Instructions: Given necessary templates and materials you are required to perform the following tasks within **1** hour. The project is expected from each student to do it.

During your work: You can ask all the necessary information's to do the operation

Lap Test Title: Conducting incident investigation

Task Objectives / Demands: in accomplishing activities required for this project the student will be able to:

1. Determine the safety requirements and measures in conducting a workplace inspection

2. Know the causes of an accident

3. Prevent accident

4. Taking steps to control or eliminate an accident

5. Help to prevent similar accidents from happening in the future

Reference Materials

Book:

1 Ethiopian Building Code Standard
2 Organizational Health and Safety books
3 The Health and Safety Poster and other HSE publications are available from www.hsebooks.com
4 Advanced electrical installation work fifth edition
5 estimating & costing (for the course of construction technology) First Edition : 2006

WEB ADDRESSES

https://youtu.be/KsUW5bHT64A

https://www.youtube.com/watch?v=JCQnx29au4

https://www.youtube.com/watch?v=veF4uSUtrEY

https://www.youtube.com/watch?v=lfoTLeFooR4

https://www.youtube.com/watch?v=cXikq14Xu7w

https://www.youtube.com/watch?v=3UeV44KwM-I

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This Teaching, Training and Learning Materials (TTLM) have been developed on December 2020.

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