

# A BASIC GUIDE To OCCUPATIONAL SAFETY & HEALTH IN CONSTRUCTION



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**This booklet was produced by the Occupational Safety and Health Department of the Ministry of Social Protection of Guyana with the support of the International Labour Organization (ILO).**



# INTRODUCTION

Occupational safety and health (OSH) is a concern for everyone. Whether working in a large enterprise, on a rural farm, on a construction site or providing food in a street stall, OSH should be fully integrated into everything that is related to work. Building and maintaining safe and healthy workplaces need the full commitment of all parties, from owners and managers to the entire workforce. In order to achieve this, a safety culture needs to be in place. An important step to building such a culture is raising the awareness of all workers about OSH issues.

In the construction sector, workers can be exposed to many hazards. These hazards can cause sickness, illness and even death. This booklet is a collection of OSH information sheets which provide straight-forward guidance to foster ownership and knowledge sharing in the construction sector. By using easy language and illustrations, the end-user would be able to understand key hazards and identify mitigation actions.



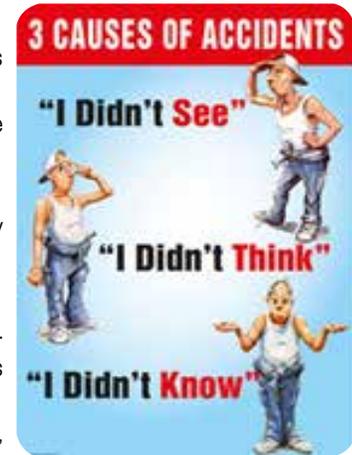
**This booklet is a contribution to prevent occupational accidents and diseases through building:**

- **A safety climate, in which individual workers have a positive attitude, positive perceptions and beliefs about OSH.**
- **A safety culture, in which everyone benefits from a safety climate and everyone not only looks after themselves, but others too.**

# ACCIDENT PREVENTION

**Accidents at work do not just happen and are not bad luck. They are caused. They are caused by unsafe acts of persons and/or unsafe conditions in the workplace.**

- Safe and healthy workplaces are the responsibility of everyone inclusive of workers, supervisors, employers and trade unions. Your actions and behaviours always have an impact on you, your colleagues and the environment.
- Identify hazards in the workplace at all times and take measures to prevent, eliminate or control those hazards. Always strive for improvements.
- Always think before you act and respect safety and health guidelines, rules, signs and signals.
- Do not operate machinery and/or handle dangerous substances without proper training and safety guards.
- Always use Personal Protective Equipment (PPE) to minimize the risk of injuries and illnesses.
- Provide unobstructed escape ways and make sure that workers know how to evacuate in an emergency.
- Know what to do in the event of an accident. Localize fire extinguishers, first-aid kits, emergency exits and muster points.
- Have an active safety and health committee at the site and provide adequate safety and health training.
- Integrate health promotion into workplace OSH policies reduce psychosocial risks and stress at work.
- Always record and report accidents and near misses.



**Investing in prevention pays: it saves lives,  
it saves money, it improves productivity and it is the law.**

**Contact the Occupational Safety and Health Section of the Labour Department  
for further advice and guidance on 225-7008**

# PERSONAL PROTECTIVE EQUIPMENT (PPE)

Always wear the appropriate PPE to protect yourself against work accidents and diseases.

## EYE & FACE PROTECTION



Safety Eyewear



Safety Goggles



Prescriptive Eyewear



Faceshield

## HEARING PROTECTION



Single-Use Earplugs



Multiple-Use Earplugs



Earmuffs



Banded Earmuffs

## HAND PROTECTION



General Purpose Gloves



Chemical Resistant Gloves



Disposable Gloves



Sleeves

## FALL PROTECTION



Harness



Lanyards



Self Retracting Lifelines



Horizontal & Vertical Lifeline Systems



Accessories

## RESPIRATORY PROTECTION



N95 Disposable Mask



Half Face Respirator



Full Face Respirator



Self-Contained Breathing Apparatus

## PROTECTIVE APPARELS



Disposable Coveralls



Aprons



Chemical Resistant Suits



Fire Retardant Apparels



Safety Vests

## PROTECTIVE FOOTWEAR



Low Cut Safety Shoes



Mid Cut Safety Shoes



High Cut Safety Shoes



Long Boots

## HEAD PROTECTION



Helmets



Bump Caps



Chef Hat

# EXCAVATIONS

**When working in trenches or excavating, protect yourself from collapsing walls by sloping, bracing or shielding the surrounding area.**



- Before digging begins on site all excavation work should be planned and the method of excavation and the type of support work required decided.
- If necessary to prevent danger, the gas, water, electrical and other public utilities should be shut off or disconnected.
- Do not go into an unsupported trench where there is a risk of collapse.
- Do not work outside the protection of trench boxes or trench supports.
- Do not work underneath an excavator, suspended or raised loads and materials.
- A competent person must inspect trenches at the start of each shift, following a rainstorm or other water intrusion or after any occurrence that could have changed conditions in the trench.
- Workers in a trench that is 1.5 meters deep or deeper should always be protected by

benching (cutting back to wall at an angle inclined away from the excavation), shoring (installing supports that prevent soil movement), or shielding (trench boxes or supports to prevent cave-ins).

- Keep heavy equipment away from trench edges.
- Keep excavated soil (spoils) and other materials at least 0.6 meters from trench edges.
- There should be an escape ladder within 8 meters of any workers in the trench.
- Establish a programme for the removal of scrap, waste and debris at appropriate intervals.

# WORKING AT HEIGHTS

**When working at heights attach yourself to a firm and secure anchor point.**

- Prevent falls by having double guard rails, toe-boards, ensuring a minimum gap between the working platforms and any structure and covering floor holes.
- Safety netting and safety harnesses can also be used. A system with an anchor, lanyard (or lifeline) and harness is designed to safely stop a fall before the worker strikes a lower level.
- When working at heights, the worker should wear a full-body harness.
- A connector, such as a lanyard or lifeline, links the harness to the anchor.
- Test the full body harness and connectors before and after use.
- Elevated workplaces including roofs should be provided with safe means of access and egress such as stairs, ramps or ladders.
- Before working at height: Consider weather conditions and check each time people will be working at heights that the place where the work will be done is safe.



# USE OF SCAFFOLDS

**A safe and suitable scaffold should be provided where work cannot safely be done on permanent structures.**

Every scaffold and part thereof should be:

- **designed so as to prevent hazards for workers during erection and dismantling;**
  - **designed so that guard rails and other protective devices, platforms, putlogs, rakers, transoms, ladders, stairs or ramps can be easily put together;**
  - **of suitable and sound material and of adequate size and strength for the purpose for which it is to be used and maintained in a proper condition.**
- Scaffolds should be provided with safe means of access, such as stairs, ladders or ramps.
  - Timber used in the construction of scaffolds should be straight-grained, sound, and free from large knots, dry rot, worm holes and other defects.
  - Scaffolds should be designed for their maximum load and with a safety factor of at least 4.
  - Scaffolds which are not designed to be independent should be rigidly connected to the building at suitable vertical and horizontal distances.
  - Scaffolds should be inspected by a competent person before being taken into use and at periodic intervals.
  - The load on the scaffold should be evenly distributed to avoid disturbance of the stability of the scaffold.
  - Workers should not be employed on external scaffolds in weather conditions that threaten their safety.



# WORKING WITH ELECTRICITY

**Make sure that all electrical equipment and installation are properly guarded when work has to be performed.**

- All electrical equipment and installations should be constructed, installed and maintained by a competent person, and so used as to guard against danger.
- All parts of electrical installations should be of adequate specifications for the power requirements and work they may be called upon to do.
- All parts of electrical installations should be so constructed, installed, properly earthed and maintained as to prevent danger of electric shock, fire and external explosion.
- The power supply to all electrical equipment should be provided with GFCI and other means of cutting off current from all conductors in an emergency.
- Lines for signalling and telecommunication systems should not be laid on the same supports as medium- and high-voltage lines.
- Suitable warnings should be displayed at all places where contact with or proximity to electrical equipment can cause danger.
- Persons having to operate electrical equipment should be fully instructed as to any possible dangers of the equipment concerned.
- Electrical installations should be inspected and tested regularly.
- Apart from some exceptional cases, work on or near live parts of electrical equipment should be forbidden.
- Always switch off the current before any work is begun on conductors or equipment that do not have to remain live. Electrical equipment and facilities should be so designed by way of lock out/tag out procedures before commencing work.



# SICKNESS OR INJURIES

## Know what to do if you or someone else is sick or injured

If someone is sick or injured:

- Call for help
- Make sure you are safe before helping someone else
- Do not move the person
- If the person is awake and alert and there is no serious bleeding protect the person from further injury until help arrives
- If the person does not respond, make sure the person is breathing, if not, provide mouth-to-mouth resuscitation
- If the person does not respond, make sure the person has a pulse. If not, provide CPR
- Control any major bleeding with direct pressure to the wound
- Protect the person from further injury until help arrives
- Do not give medication without professional advice.

CPR is as easy as

# C - A - B



**C**ompressions  
Push hard and fast  
on the center of  
the victim's chest



**A**irway  
Tilt the victim's head  
back and lift the chin  
to open the airway



**B**reathing  
Give mouth-to-mouth  
rescue breaths

**Early chest compression can immediately circulate oxygen that is still in the bloodstream. By changing the sequence, chest compressions are initiated sooner and the delay in ventilation should be minimal.**

2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations



# PROTECTION FROM FALLING OBJECTS

**On construction sites wear an approved helmet to protect yourself from falling objects.**

- Whenever there is a danger of objects falling from above, always wear head protection and eyewear protection where applicable.
- Helmets are required to have a hard outer shell and a shock-absorbing lining that incorporates a headband and straps that suspend the shell from away from the head.
- Helmet must fit appropriately on the body and for the head size of each individual. The helmet should not bind, slip, fall off or irritate the skin.
- Never drill holes, paint or apply labels to helmets as this may reduce the integrity of the protection and may eliminate electrical resistance.
- Helmets that are perforated, cracked, or deformed should be immediately removed from service and replaced.
- Helmets that have received an impact, even if damage is not noticeable, should be immediately replaced.
- When necessary to prevent danger from falling objects, working platforms, gangways and stairways of scaffolds should be provided with overhead screens of adequate strength and dimensions.



# SAFE USE OF LADDERS

## Prevent serious injury from falls by using a ladder properly

- Use the correct ladder for the task. Make sure that ladders are not defective and long enough to safely reach the work area.
- The base of the ladder should never be on moveable objects. It should be on a stable surface.
- For a leaning ladder, secure it (for example by tying the ladder to prevent it from slipping either outwards or sideways) and have a strong upper resting point.
- The ladder must be angled at 75° (1 unit out for every 4 units up).
- Grip the ladder and face the ladder rungs while climbing or descending.
- Keep hands free of all items when climbing (use a tool belt).
- Always maintain three points of contact when climbing (this means a hand and two feet) and wherever possible while working.
- Don't work off the top three rungs, and try to make sure the ladder extends at least 1 metre (three rungs) above where you are working.
- Ladders and electricity are a dangerous combination. Ensure your safety.
- Don't overload the ladder.



# TOOLS STORAGE AND USE

**Organise, maintain and keep your tools clean**

- Put frequently used tools, controls and materials within easy reach of workers.
- Use jigs, clamps, vices or other fixtures to hold items while work is done.
- Attach proper guards to dangerous moving parts of machines such as exposed gears, chain drives and projecting shafts.
- Attach easy to read labels and signs in order to avoid mistakes in machine operation.
- Ensure safe wiring connections for supplying electricity to equipment and lights.
- Remove all projecting nails in wood and other materials.
- Ensure that you are licensed and skilled to operate agricultural and other heavy machinery.

## **5 basic safety rules for tools:**

1. Keep all tools in good condition with regular maintenance.
2. Use the right tool for the job.
3. Examine each tool for damage before use and do not use damaged tools.
4. Operate tools according to the manufacturers' instructions.
5. Properly use the right personal protective equipment.

## **Tool Storage**

- Provide an adapted storage place near the work area for raw materials, parts and products.
- Provide a conveniently placed "home" for each tool.
- Identify the most frequently used tools. Ensure they are placed within easy reach.
- Use specially designed belts or bags to carry frequently used hand tools.

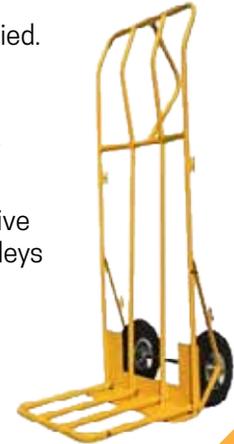


# LIFTING & MOVING OBJECTS AND MATERIALS

**When moving heavy objects,  
safely use machines and devices**



- Prevent injuries by using appropriate equipment such as rollers, wheeled platforms, or lifting devices that can often be made from local materials.
- Awkward and strenuous bending postures may cause low back injury and should be avoided.
- Use roller conveyors to move heavy loads for short distances.
- Design a new device or modify an existing one to suit the load to be carried.
- When moving heavy objects at floor level, place a wheeled pallet underneath.
- Use inclined conveyors to move loads between two places with a height difference.
- Lifting and handling devices need regular maintenance to ensure effective operation. Check all parts, such as rollers, steel beds, rubber beds or pulleys at regular intervals.

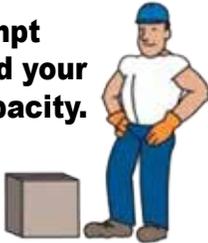


# SAFELY LIFTING WEIGHTS

**When you lift, bend your knees, not your back**

## SAFE LIFTING TECHNIQUES

**Do not attempt to lift beyond your strength capacity.**



Stand close to object with feet spread shoulder width apart and one foot slightly in front of the other for balance.



Squat down, bending at the knees (not the waist). Tuck in your chin and keep your back as straight as possible.



Get a firm grasp on the object before beginning the lift.



Lift with your LEGS by straightening them.



After lifting, keep the package as close to the body as possible.

- Think and plan before you lift.
- Keep the load close with the heaviest side next to the body.
- Your feet should be apart with one leg slightly forward.
- Ensure a good grip.
- Don't bend your back.
- Don't twist when you lift.
- Look ahead.
- Move smoothly.
- Know your limits.
- Lower down, then adjust.
- Wear back and waist support where needed.

# VIOLENCE AT WORK

## Practice ways to diminish the possibility of being violently attacked

- Always be vigilant to protect yourself or reduce the risk of a violent event. Violence can happen to anyone.
- Avoid traveling alone into unfamiliar locations or situations whenever possible.
- When working with the public consider installing a barrier between you and the customer.
- When possible, install surveillance cameras and a means of calling for help.
- If working at night, ensure your work area and the areas you walk are well lighted.
- Carry only minimal money and required identification into community settings.
- Avoid behaviours that could provoke aggression or violence.
- Be familiar on how to recognize, avoid, or diffuse potentially violent situations.
- Alert supervisors to any concerns about safety or security.
- Report all incidents immediately in writing.



# STRESS AT WORK

**Dealing with stress:  
Discuss with your superiors and  
subordinates the scope and pressures of the job**

Stress at work normally occurs when there are several factors present:

- the demands placed on the worker are perceived by the worker as high.
- the control of the worker to meet the demands is perceived by the worker as low.
- there is a perceived lack of social support.
- the expectation for the amount of compensation for the amount of effort is not met.

These issues can be addressed when there is regular dialogue between workers and their supervisors.

Effective and frequent dialogue builds an individual's resilience to stress at work.

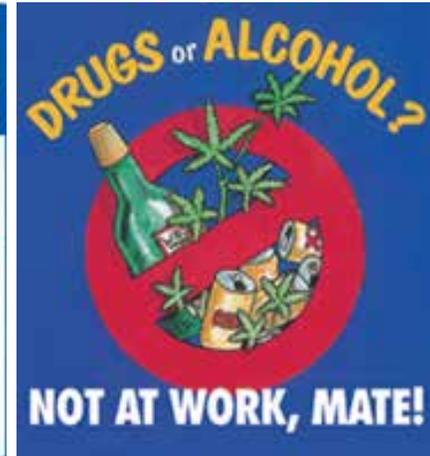


# ALCOHOL AND DRUGS

**Using alcohol and drugs while working  
can lead to serious injury or death**

Alcohol and drugs can cause or make worse:

- Distorted vision and impaired vision
  - Impaired judgement and physical coordination
  - Loss of concentration and coordination
  - Memory loss
- 
- Drinking alcohol and/or using drugs while carrying out work increase the risk of accidents.
  - Heavy drinking the night before may result in a significant blood alcohol level the next morning putting workers and co-workers at risk.
  - If a worker has a problem with alcohol, it is important to seek assistance from a counsellor or a medical doctor.
  - Alcohol consumption/drug use on the job can affect team morale and employee relation.



# WORKING ENVIRONMENT/ WORKERS' WELFARE

**Safety and Health are improved if adequate welfare infrastructures are provided**

- At or within reasonable access of every work site an adequate supply of wholesome drinking water should be provided.
- When working outside in the heat drink at least three litres of drinking water per person a day.
- Wear hats, long-sleeved shirts, neck coverings, and long pants to protect your skin from the sun and keep you cooler.
- Consider attaching a neck flap to your hard hat to protect your neck from the sun.
- Men and women workers should be provided with separate sanitary and washing facilities.
- Adequate resting corners and a separate hygienic place for preparing and eating meals must be provided.
- Provide opportunities to take frequent short breaks for strenuous work or work requiring continuous attention.
- Where natural lighting is not adequate to ensure safe working conditions, adequate and suitable lighting should be provided.



# EMERGENCY PROCEDURES

## Know what to do if you see a fire or hear a fire alarm

- Provide unobstructed escape ways and make sure that workers know how to evacuate in an emergency.
- Always have the appropriate fire extinguishers and know how to use them.

When you discover a fire or hear a fire alarm immediately:

- STOP what you are doing and/or raise the alarm.
- SHUT DOWN YOUR MACHINE if safe to do so.
- GO calmly to the external emergency assembly area by your primary exit.
- Wait for further instructions



# EMERGENCY NUMBERS

## **POLICE**

911  
225-6940

## **FIRE**

912  
226-2411-3

## **EMT/AMBULANCE**

913  
226-0384, 226-5174 (Red Cross)

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## **MINISTRY OF PUBLIC HEALTH**

### *Region #1*

Mabaruma Hospital - 777-5057  
Port Kaituma Hospital - 777-4047  
Matthews Ridge Hospital - 777-9283/4

### *Region #2*

Suddie Hospital  
774-4227, 774-4627-8

### *Region #3*

West Demerara Hospital  
254-1256-9, 254-0311

### *Region #4*

Georgetown Public Hospital Corp.  
227-8210-12

### *Region #5*

Fort Wellington Hospital  
232-0304

### *Region #6*

New Amsterdam Hospital  
333-2381, 333-2591

### *Region #7*

Bartica Hospital - 455-2846, 455-2339

### *Region #9*

Lethem Hospital  
772-2206

### *Region #10*

Linden Hospital Complex  
444-6127, 444-6137

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## **ELECTRICITY GPL**

Essequibo Coast  
and Islands - 777-5015

East Bank Essequibo,  
West Bank Demerara  
West Coast Demerara  
226-4015, 226-4016

East Bank Demerara  
East Coast Demerara  
226-4015

West Coast Berbice  
East Coast Berbice  
333-2186

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## **DEPARTMENT OF LABOUR**

225-7302, 227-3133  
227-3135, 225-7008

## **EPA GUYANA**

225-5471

## **PESTICIDES & TOXIC CHEMICALS CONTROL BOARD (PTCCB)**

220-8880, 220-8838



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