

SAFETY ON SMALL TOOLS AND ELECTRICAL APPLIANCES

SAFETY PRECAUTIONS TO BE FOLLOWED WHILE WORKING WITH ELECTRICAL HAND TOOLS & GADGETS.

- a) The electrical hand tools should be of good construction with certification from BIS (**Bureau of Indian Standards**) or any other international agency similar to BIS working on 110V, 50 cycles per second (AC) supply.
- b) The cable connected to the machine tool should be of good quality double insulated three-core type, so that proper earth is made effectively. The cable end should have been connected to a 3 pin top. The cable should not have joints. All long cables with joints should have proper protection.
- c) The electrical circuit should be checked for earth before commencement of work.
- d) The work should be carried out only by trained personnel. They should wear Safety shoes without nails. They should wear spectacle type goggles with side covers while working with portable drilling & grinding machines to avoid eye injury.
- e) The cable should not be left on the floor where there is chance of running over by trolleys having metal wheels or chance of falling of metal scrap from height on the cable.

Hand Tools: Have no power source, other than the physical force applied by user.

Power Tools: Require a non-human power source to function properly.

Eg: External – Electricity, Compressed Air etc.

Internal – Battery Pack, Internal Combustion Engine etc.

Both kinds of tools require specific safety precautions or rules to be followed; yet some rules will apply to both.

There are 5 basic rules that apply to all tools either hand or power.

- Keep all tools in good working order
- Use the tool only for what it is designed to do
- Examine the tool for damage before each use
- Always follow the manufacturer instructions when operating any tool
- Always wear the appropriate PPE when operating any tool

Hand Tool Safety Rules:

- Tag worn, damaged or defective tools and do not use them.
- Carry all sharp tools in a holster or sheath
- Do not perform make shift repairs to tools
- Do not throw tools from one location to other or from one employee to another
- When working on ladder or scaffolding be sure you and your tools are secure
- Do not carry tools in your hands while climbing, use a tool belt or host the tools by using hand line

Greatest Hazards of Hand Tools: Misuse / Improper Maintenance

- Using a screwdriver as a chisel could cause the tip to break and fly, hitting either the operator or bystanders
- A wooden handle on such as a hammer or an axe is loose, splintered or cracked, the tool head could fly off and strike the operator or bystanders.

- Impact tools, e.g. chisels and wedges, are unsafe if their heads are mushroomed. The heads might shatter on impact sending sharp fragments by flying
- Wrenches must not be used if the jaws are sprung, cracked or twisted, the wrench could slip off

Safety Rules for Specific Hand Tools:

1. Hammers:

- Use a claw hammer for pulling nails
- Do not strike a hard end steel surface with claw hammer
- Do not strike one hammer against other
- Do not use a hammer as a wedge.

2. Chisels:

- Use chisels that are sharp
- Do not use chisel with a mushroom head
- Use only hammers that are designed for use with chisels

3. Saws:

- Do not carry the saw by the blade
- Do not use any saw that has a dull saw blade
- Keep control of the saw by releasing downward pressure at the end of each stroke

4. Screwdrivers:

- Always ensure the screwdriver fits the head of the screw
- Do not hold the work piece against your body while using the screwdriver
- Do not use a screwdriver as a punch, chisel, pry-bar or nail puller
- Do not use a screwdriver to test the charge of a battery
- Use blue handled screwdrivers when working on electrical
- Do not use a screwdriver to make a starting hole for screws.

5. Wrenches:

- Do not use wrenches that are bent, cracked, or that have loose handles
- A hammer may be used for striking “face wrenches” only
- If at all possible use socket or box wrenches

Power Tool Safety Rules:

- Do not use power tools you are not trained on
- Do not lift or carry power tools by their power cord
- Keep power cords out of the paths of the power tool
- Do not leave tools unattended
- Do not stand in water or wet surfaces when running a power tool
- Hold all power tools by the plastic hand grips or other non-conductive areas
- Do not plug multiple electrical cords into a single outlet
- Do not use power tools or extension cords with a missing prong
- Ground all tools unless double insulated

- Be aware of all power lines, electrical circuits and water pipes that are not visible
- Do not wear loose clothing, dangling objects or jewellery. Long hair must be restrained
- All observers should be kept a safe distance from the work area

Abrasive-wheel tools:

Powered abrasive grinding, cutting, polishing and wire buffing wheels create special safety problems because they can throw off flying fragments.

- Before an abrasive wheel is mounted, it should be inspected closely and sound or ring tested to ensure it is free of cracks or defects

To test wheels, tap them with a light non-metallic instrument.

- If they sound “cracked or dead” do not use them. They could fly apart
- Always use the right wheel or cup for the job you are performing. Be sure to match the “RPM rating” with tool. Finally, pay close attention any “special warnings”, that the manufacturer may offer, such as “do not use in wet or high moisture conditions.”

Drills:

- Be sure the chuck is securely tightened to the spindle
- Tighten the bit securely and remove the chuck key
- Always hold or brace the tool securely and use any auxiliary handles if provided
- Don’t force a drill. Apply only enough pressure for the bit to do the cutting.

ROLE OF SUPERVISORS ON SAFETY

General:

Supervisor should watch the employees’ job performance to ensure that all necessary tasks are completed in accordance with specifications and deadlines. Supervisor is responsible for seeing that the work of your staff meets established performance standards. When an employee begins to show a consistent pattern of problem behavior, Supervisor must take action. Supervisor must work to create and maintain a work environment that is free from discrimination, harassment and sexual harassment. Educate and Counsel the staff and organize meetings in order to improve the work environment. Supervisor should ensure that, Time to time, the staff should be booked for attending different training courses. Ensure required material is available at the site of work place and it should also be planned for future requirements. Distribution of work to staff should be according to their ability.

To avoid re-occurrence of any failure, failure analysis should be carried out.

Role in Accidents Prevention:

- Training the team
- Communicating with it
- Role Modeling
- Enforcing the rules
- Coaching the team
- Conducting hazard assessments
- Conducting accident investigations Immediate.

Role in case Accident Occurs:

- Understand the nature of the accident by listening to the siren and decide whether ART or ARME are required. Try to collect more and more information in regard to the nature of accident.
- Mobilize the staff specifically skilled staff, Crane operator, & ensure their attendance personally
- Ensure electrical, S&T other departmental staff have reported.
- Communicate to the control about Officers senior subordinates.
- Start the power packs and warm-up IC engines.
- Clear-cut instructions to the staff for their location at accident spot and their role of play.
- Depute sufficient staff for kitchen & protocol activities.
- Gas & cutting equipment to be checked for their proper working.
- Ensure that staff is available on BD (Break down) crane when the crane is on run.
- Plan for removal of match-truck if crane is to be used for restoration work.
 - Take instruction from the higher officers ON –Board and comply with the same.
- Plan for the items which are to be unloaded from the BD special at the site of accident.
- Survey the accident spot, No of vehicle/wagon Derailed/capsized etc to be noted and whether the situation can be handled only with HRE (or) crane is required.
- Estimate the probable restoration time and convey the same to the control.
- Record joint observation of track, Rolling stock, wagon, loco along with other Sr subordinates.
- A rough sketch of accident site to be prepared
- All the items which were un loaded at the site of accident to be loaded back to the BD special.
- Assist the officers at site to arrive at the PRIME-FACIE cause of the accident.

Role in Accident Investigation:

- Arrangement to be made to record the vehicle/wagon reading at the earliest.
- Sufficient copies of “readings” of the vehicle to be prepared and submitted to the inquiry committee.
- Prepare cost of damage of vehicle/wagon and submit to the inquiry committee.
- Assist in recording of joint observation/measurement of track, S&T gears, points & crossings etc.
- Preserve all clues of accident.
- Attend the accident inquiry.