

Chapter Eight: Electrical Safety

8.1. Introduction

The main hazards from electricity are shock, burns, fire and explosion. Electricity is used in all workplaces and, if used properly, is a safe and efficient form of energy. If used improperly, it can however be a major source of danger. In garment factories, it is all too common to see frayed wiring, dangling wires not properly fixed, broken plug sockets (refer back to pictures 14 and 15). Not only is there the danger of electric shock and electrocution, there is the possibility of starting a fire in the factory. When you consider the poor housekeeping in many factories with combustible material all over the floors and workbenches, it is easy to see how factory fires can start especially if the electrical wiring is in poor condition and not maintained on a regular basis.

8.2. Core Information

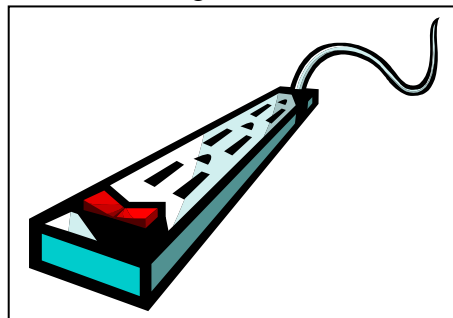
In order to ensure electrical safety in your factory, you should ensure that:-

- All plugs, sockets and fittings are sufficiently robust for factory use and all cables and wires are in good condition – **there should never be any exposed wiring**. All power cables to machines should be armoured, covered in thick flexible rubber or PVC, or installed in conduits. The wiring should be run across the ceiling and drop down to individual machines – it should never be run across the floor where it is likely to cause trips and falls. Wherever possible, wiring should be firmly fixed to walls, benches etc;

REMEMBER – replace all damaged or frayed cables completely. Join lengths in good condition only by using proper connectors or cable couplers.

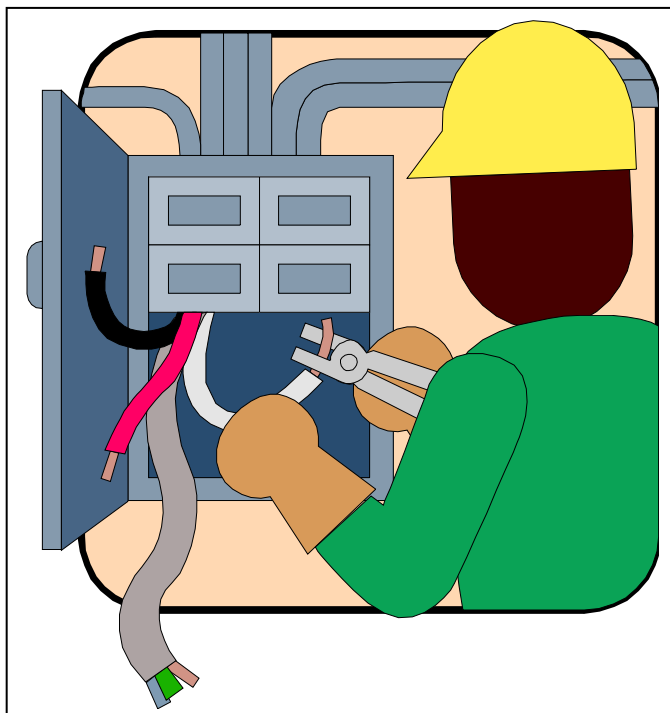
- There must be a switch or isolator near each fixed machine to cut off the power in an emergency. The switches should be clearly labelled and within easy reach. All workers should know the positions of these switches and trained in what to do in the case of any emergency.
- All circuits should be protected with circuit breakers or fuses – it is essential that these circuit breakers and fuses are correctly rated for the circuit they protect;
- All equipment should be earthed and a separate earthing wire should run from the machine to an independent earthing rod;
- Enough socket outlets are provided – avoid multiple adaptors and loose extension leads. Overloading sockets with too many adaptors is a fire hazard. If necessary, use a fused multi-plug socket block (see figure 19);

Figure 19: A multi-plug socket block.
Always ensure that you use the best, robust electrical equipment – don't cut corners.



- Always use a proper plug with the flex firmly clamped to stop the wires, particularly the earth, from being pulled out of the terminals;
- Portable tools like cutting machines and equipment should be double-insulated and earthed;
- Make sure that all electrical installations are checked regularly and repairs carried out by a competent electrician (figure 20);

Figure 20: Always make sure that a competent electrician is used to check all electrical installations and carry out repairs. Any faulty equipment should be taken out of service, clearly labelled as such, and not to be used until repaired and checked that it is working properly and safely by a competent electrician.



- Tools and power sockets are switched off before plugging in;
- Appliances are switched off and unplugged before cleaning or making adjustments.

In the case of a worker suffering an electric shock:

1. Turn off the power and remove the person from the electrical source. **ON NO ACCOUNT SHOULD YOU TOUCH THE PERSON WITH THE ELECTRICITY ON – YOU WILL ALSO BE ELECTROCUTED;**
2. If the switch is not accessible, find a non-conducting object (such as a wooden broom handle) to pull/push the person from the power source or vice versa;
3. Once the person is clear of the power source, get first aid/medical treatment.

8.3. Checklist for Electrical Safety

	Yes	No	Action Required
Are all plugs, sockets and electrical fittings sufficiently robust for use in the factory?			
Are all electrical fuse/junction boxes in the factory securely fixed, closed and undamaged?			
Are fuses, circuit breakers and other electrical devices correctly rated for the circuit they protect?			
Is access to fuses boxes etc prevented and the key held by a responsible person?			
Are main switches readily accessible and clearly identified, with all workers knowing how to use them in an emergency?			
Are all electrical installations checked periodically and repairs carried out by a competent electrician?			
Are there any cables or wires without proper casing found in the factory?			
Are any electrical wires improperly spliced or taped?			
Is electrical equipment properly grounded to prevent electrocution or fire?			
Are any electrical wires found in damp areas or standing water?			
Are any electrical wires obstructing aisles or passageways?			
Are all visible electrical wires securely fixed?			

8.4. Summary

Electrical hazards are found in many garment factories. They not only present dangers to workers who operate the machinery, they also represent a serious fire risk. A walkthrough inspection can reveal many electrical hazards that need urgent attention by a competent electrician.