



## ELECTRICAL SAFETY

Working with electricity can be dangerous. Engineers, electricians, and other professionals work with electricity directly, including working on overhead lines, cable harnesses and circuit assemblies. Others, such as office workers and salespeople, work with electricity indirectly and may also be exposed to electrical hazards.

Many workers are unaware of the potential electrical hazards present in their work environment, which makes them more vulnerable to the danger of electrocution.

### What are the Risk Factors?

Electricity has long been recognized as a serious workplace hazard. Depending on the industry, employees are exposed to dangers such as electric shock, burns, electrocution, fires and explosions. For example, electricians working near power lines are at significant risk of injury, employees operating tools or machinery are at a moderate risk, and office workers who may plug in equipment such as computers are at a much lower risk.

Electrical burns cause tissue damage and are the result of heat generated by the flow of electric current through the body. Excessive electricity flowing through the human body can cause serious damage to internal organs. Resulting medical problems include hemorrhage (or internal bleeding), tissue destruction and nerve or muscle damage. These internal injuries may not be immediately apparent to the victim or observers; however, left untreated, they can result in death.

Electrical shock can also cause involuntary contractions that can damage muscles, tendons and ligaments, and may even cause broken bones. Receiving an electrical shock when grasping an object may cause hand muscles to contract, making it impossible to drop the object and prolonging contact with the current.



Also, injury or death may result when violent muscle contractions cause workers to fall from ladders and scaffolds, or inadvertently strike other objects.

### Preventing Electrical Injuries

- Do not raise any equipment such as ladders, scaffolding, cranes or poles into power lines.
- When moving large equipment near a power line, a spotter should be used to make sure accidental contact with a power line is not made.
- Use nonmetallic ladders to conduct electrical repairs.
- Wear the proper personal protective equipment; head, hand and foot protection, when working with electricity.
- Lock out / tag out procedures should be in place.
- Power tools should contain a third prong / or be rated “double insulated” to ensure proper grounding.
- Do not wear jewelry, watches or other metal objects when working with electricity.
- Inspect power tools / machinery before usage.
- Repair or replace frayed electrical cords.



*Removing the ground pin from a plug to fit an ungrounded outlet is an electrical hazard that could lead to shock or fire.*



- When working in wet or damp areas a GFCI (Ground Fault Circuit Interrupter) protector should be used.
- Panel boxes, fuse boxes, electrical outlets and all electrical components should be adequately guarded.
- Never run extension cords through ceilings, floors, doorways and windows.
- Never overload electrical outlets.