



Company Name: _____ Job Site Location: _____

Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

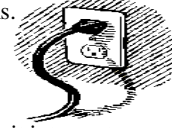
Topic 38: Electrical Cords

Introduction: Electricity is important on jobsites where power tools are required. Many workers are electrocuted each year because they did not follow safe work practices for electricity or were unfamiliar with the equipment that was in use. A large percentage of electrical accidents are caused from using improperly grounded temporary electrical systems or damaged power tools and extension cords on the jobsite. The most common electrical hazard on today's construction sites is from the ground fault electrical shock, which can easily be avoided if proper precautions are taken.

Electrical shock is often only the beginning in a chain of accidents. The final injury may be a fall, cut, burn, or broken bone. The most common electrical shock-related injury is a burn. Burns suffered may be electrical burns, arc burns, and thermal contact burns.



Extension cords are used on the job for many purposes and if not carefully chosen for the job and properly cared for, can be hazardous. The main concern is the connectors, insulation, and the appropriate wire size needed to carry the current. If the wrong length or size of cord is selected for a particular tool then the voltage available is reduced to the tool, creating an over-current hazard.



In order to reduce electrical shock-related injuries, the OSHA electrical standard requires employers to provide either ground fault circuit interrupters (GFCIs) for receptacle outlets, or an assured equipment grounding conductor program. Either method can eliminate ground fault electric shock hazards.

Ground Fault Circuit Interrupters (GFCI) will help to minimize most dangerous situations. GFCI protection must be at the outlet end of the circuit. These are available in a short extension cord configuration and are a simple means to achieve protection from electrical shock hazards. However, keep in mind that GFCIs are not fool-proof, and under wet conditions are not always effective. Fatal shocks are most likely to occur under damp or wet conditions or if the user of an electrical device is touching a metal object such as a ladder or pipe.



Plugs and receptacles must match the job at hand. Each type of receptacle is designed to handle a specific amount of voltage and current. Always be aware of your circuit requirements. Most plug-in electrical tools manufactured today are designed to reduce the danger of electrical shock and have plastic housings, double insulation, and other safety features. If possible, use only tools of this type.

Electric tools — To maximize his or her own safety, an employee should always use tools that work properly. Tools must be inspected before use and if found defective, properly tagged and removed from service.



Specific OSHA regulations that cover flexible extension cords and grounding requirements include:

- **Extension cord sets** used with portable electric tools and equipment shall be of three-wire type and shall be designed for hard or extra-hard usage.
- **Inspect all cords** and power tools to ensure that the plug is a 3-prong plug with proper grounding. Never remove or cut-off the ground plug.
- **Receptacles, cord connectors, and attachment plugs** shall be constructed so that no receptacle or cord connector will accept an attachment plug with a different voltage or current rating than that for which the device is intended.
- **Receptacles connected** to circuits having different voltages, frequencies, or types of current (AC or DC) on the same premises shall be of such design that the attachment plugs used on these circuits are not interchangeable.
- **A conductor used** as a grounded conductor or as an equipment ground shall be identifiable and distinguishable from all other conductors.
- **A grounding terminal** or grounding-type device on a receptacle, cord connector, or attachment plug shall not be used for any other purpose.
- **No grounded conductor** shall be attached to any terminal or lead so as to reverse designated polarity.
- **Flexible cords and cables** shall be protected from damage. Sharp corners and projections shall be avoided. Flexible cords and cables may pass through doorways or other pinch points, if protection is provided to avoid damage.
- **Extension cords** must not be arranged in a tangled, cluttered manner that creates a trip and fall hazard.
- **Splices** — Flexible cords shall be used only in continuous lengths without splice or tap. Hard service flexible cords No. 12 or larger may be repaired if spliced so that the splice retains the insulation, outer sheath properties, and usage characteristics of the cord being spliced.



NOTE: It is important that any damaged cords be removed from service and "tagged out" for safety and to prevent code violations.

Conclusion: It is essential to have electricity available on the jobsite. The above-mentioned regulations and requirements were established and implemented to curtail electrical shock fatalities. It is the employer's responsibility to provide safe equipment and working conditions. Likewise, it is the employee's responsibility to use safe work practices, good sense, and caution when electrical equipment is in use.

Work Site Review

Work-Site Hazards and Safety Suggestions: _____

Personnel Safety Violations: _____

Employee Signatures: _____
(My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

Foreman/Supervisor's Signature: _____

These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.