



Worksite: \_\_\_\_\_ Instructor: \_\_\_\_\_ Date/Time: \_\_\_\_\_

**TOPIC C015: GROUNDING & ELECTRICAL TOOLS**

**Introduction:** Electricity can be safe if used properly. Most workplace electrical accidents are caused by using improperly grounded temporary electrical systems or damaged power tools and extension cords. The National Electrical Code for grounding conductors requires that a system-grounding conductor be connected to any local metallic water-piping system available on the premises, provided the length of the buried water piping is a minimum of 10 feet. If this isn't possible, then a grounding electrode must be used.

**Ground Fault Circuit Interrupters (GFCIs)** help minimize most dangerous situations. However, keep in mind that GFCIs are not foolproof, 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.

**Extension cords** are used on the job for many purposes, but if not carefully chosen for the job, and properly maintained, can be hazardous. If the wrong length or size of the cord is used for a tool, the voltage available is reduced, creating an over-current hazard.

**Plugs and receptacles** must be the right size for the work being done. Each type of receptacle is designed to handle a specific amount of voltage and current. 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 these types of tools.

**OSHA has specific regulations that cover grounding requirements:**

**A conductor used** as a grounded conductor or as an equipment ground must be identifiable and distinguishable from all other conductors.

**No grounded conductor** can be attached to any terminal or lead in a way that could cause a reverse in polarity.

**A grounding terminal** or grounding-type device on a receptacle, cord connector, or attachment plug must not be used for any other purpose.

**The company will** use either a GFCI or an assured equipment grounding conductor program to protect employees in the workplace.

**All 120-volt**, single-phase, 15- and 20-amp outlets used on the jobsite that aren't a part of the building or structures permanent wiring and are used by employees must have approved GFCIs.

**Receptacles** on a two-wire, single-phase portable or vehicle-mounted generator rated less than 5KW, where the circuit conductors of the generator are insulated from the generator frame or other grounded surfaces, don't need to be GFCI protected.

**The company will ensure** that all portable electrical tools used in the workplace are equipped with proper grounding plugs (three prong), and should have double insulated housings for added shock protection.

**Conclusion:** The regulations and requirements mentioned above were established and implemented to reduce electrical shock fatalities. The company is responsible for providing safe conditions and equipment. Employees are required to use safe work practices, good sense and caution when using electrical equipment. Follow these requirements for safe electrical-powered operations.

**Employee Attendance:**(Names or signatures of personnel who are attending this meeting)

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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.