

TST #107-A

Electrical Safety

An electrical shock occurs when the body creates a complete circuit between one conductor and another or a grounding source. These shocks can cause injury or even death, depending on the amount of current. The higher the voltage, the more current flows through the body. Poor judgment in regards to electrical safety can be costly in terms of money and health, as the following two scenarios illustrate.

A concrete sawing and drilling company received a citation in four parts, all stemming from the same piece of equipment. The citation read, "Employees were exposed to an electrical hazard from a metal electrical junction box that was made into a 4-receptacle box to power the coring machine and vacuum. The box was on the concrete floor, not surface-mounted or flush-mounted as listed for its use, and was subject to damage. The box was in a puddle of water in which the employees were standing and walking. The generator cord was plugged into the 30-amp receptacle of the generator and into a 'pigtail.' There was no Ground Fault Circuit Interrupter (GFCI) on the receptacle and no assured grounding program. Cords entering the side of box were not protected against wear and abrasion. The outer sheathing of the cords was pulled away from electrical units." The original citation issued was for \$17,500 but it was negotiated down when the company was able to persuade OSHA of its commitment to safety and training.

In another incident, an operator experienced a severe electrical shock while running his electric flat saw. As the operator was backing the saw, the electrical cord became pinched between the saw and a steel studded wall. The operator was holding the handle as he received a 480-volt electrical shock. Although the operator fully recovered, the situation could have been much worse.

Electricity is widely recognized as a potential workplace hazard, exposing employees to electric shock, burns, fires and explosions. Working on or around electrical conductors and equipment can be particularly dangerous, because electrical energy often cannot be sensed until contact is made. Be consistent in applying these electrical safety guidelines to your work every day:

1. Inspect the work area for possible electrical hazards.
2. Never overload a circuit by plugging too many items into one outlet.
3. Keep all electrical supplies away from damp or wet areas.
4. Shut off the main source of power when working on anything electrical such as switches or outlets.
5. Keep all cords and hoses out of the path of travel.
6. Ground all electrical equipment.
7. Although it is not always possible, take all steps necessary to avoid cutting into electrical lines.
8. Wear the proper Personal Protective Equipment (PPE) including rubber boots and gloves.

Electrical Safety Quiz

The following statements should be answered with "True" or "False." Answers below.

1. It is not the operator's responsibility to inspect the work area for possible electrical hazards.
2. Operators should never overload a circuit by plugging too many items into one outlet.
3. Electrical shock can only occur when your body creates a complete circuit between a conductor and another conductor or grounding source.
4. Operators should never shut off the main source of power when working on switches or outlets.
5. The higher the voltage, the less current will flow through the body.

Employee Name: _____

Signature: _____ Date: _____

Answers:

1. False
2. True
3. True
4. False
5. False