

Subject: Basic Electrical Safety

To All:

FYI - From Safety Smart weekly eNews at www.safetysmart.com

Gary

No-Fault Electrical Equipment

With any electric appliance or tool, fixed or portable, there is no such thing as a minor shock. Dry-skin conditions might allow you to get a shock that does not injure you. However, the next time you or someone else contacts the short, it could be fatal. Such incidents have killed many workers.

To understand how these accidents happen, let's start with a few basic electrical terms. Voltage is pressure, the force that causes electrical current to flow. Household-level voltage of 110-120 volts is common in non-industrial workplaces. Current, or amperage, refers to the amount of electricity that is flowing. Resistance means the restrictions that slow or stop the flow.

You get an electrical shock when a part of your body completes a path, or circuit, between a conductor and another conductor or grounding source. An electrical ground is a connection between a circuit and the earth or some other major conducting body.

Voltage does not cause death or injury. Damage is done by the amount of current that flows through your body. However, as a general rule, the higher the voltage, the greater the amount of current. Some people survive shocks of several thousand volts, but others die from as low as 12 volts — car battery levels.

Moisture and electricity are a dangerous mix because water conducts electricity. If your body is sweaty, the dampness lowers its resistance. Electricity takes the path where there is the least resistance, so an electrical device can be grounded with a wire for electricity to flow to the ground. If your electrical tool develops a short circuit while your hands are dry and you are standing on a dry floor, the current will likely go down the ground wire instead of heading to your vital organs.

Never use a power tool that has become wet. If you use a portable electrically powered hand tool it must be an approved double-insulated type unless you are certain the non-current-carrying part of it is grounded. A pipe that does not go into the ground is useless for grounding. If your double-insulated tool needs repairs, the manufacturer must do them.

Check electrical cords regularly for fraying, cracking or exposure of wires. Make sure any electrical equipment you use is in top condition with no damage to plugs, insulation or connections. If you see any defects, take the item out of service and tag it to prevent another person from using it.

The damaged tool must be repaired correctly by an authorized person before returning to service or replaced with safe equipment. If you find a grounded plug that has the third prong broken off, don't use the tool.

Don't do electrical work you're not qualified to do, even if someone requests it. Not only would you put yourself in danger, incorrect repairs could endanger someone else much later. Electric work isn't any place to use ingenuity – makeshift repairs kill. Report any sign of electrical malfunction. Malfunctions can cause shocks and fires.

Gary Jones
Printing Industries of America
Graphic Arts Technical Foundation
200 Deer Run Road
Sewickley, PA 15143
P: 412/259-1794
F: 412/741-2311

MARK YOUR CALENDAR!
National Environmental, Health, and Safety Conference
for the Graphic Communications Industries
March 10-12, 2008
www.nehsconference.org

See what's new at AOL.com and [Make AOL Your Homepage](#).