**Electrical Safety Overview**

1. **CORD AND PLUG OPERATED** electric tools with exposed metal parts must have a **three-prong grounding plug** – **AND** be grounded – or else be double-insulated.

2. **EQUIPMENT GROUNDING** only works when there is a permanent and continuous electrical connection between the metal shell of a tool and the earth.

3. **PROPER POLARITY IN ELECTRICAL WIRING IS IMPORTANT**: hot to hot, neutral to neutral, equipment ground to equipment ground. Polarized plugs have a wider neutral blade to maintain correct polarity. **Reversed polarity can kill**.

4. **CIRCUITS MUST BE EQUIPPED WITH FUSES OR CIRCUIT BREAKERS** to protect against dangerous overloads. Fuses melt, while circuit breakers trip to turn off current like a switch. **Overcurrent protection devices protect wiring and equipment from overheating and fires**. They may, or may not, protect you.

5. **MOST 120 VOLT CIRCUITS** are wired to deliver up to 15 or 20 amps of current. **Currents of 50-100 milliamperes can kill you.** *(1 mA – 1/1,000 of 1 Amp)*

6. **WET CONDITIONS LOWER SKIN RESISTANCE**, allowing more current to flow through your body. **Currents above 75 milliamps can cause ventricular fibrillation** which may be fatal. **Severity of a shock depends on:** path of current, amount of current, duration of current, **voltage level**, moisture and your general health.

7. **A GROUND FAULT CIRCUIT INTERRUPTER (GFCI)** protects from a ground-fault, the most common electrical hazard. GFCIs detect differences in current flow between hot and neutral. They trip when there is current leakage – such as through a person – of about 5 milliamperes and they act within 1/40 of a second. Test a GFCI every time you use it. It must “Trip” and it must “Reset.”

8. **EXTENSION CORD WIRES MUST BE HEAVY ENOUGH** for the amount of current they will carry. For construction, they must be UL approved, have strain relief and a 3-prong grounding plug, be durable, and be rated for hard or extra-hard usage.

9. **OVERHEAD POWER LINES CAN KILL.** The three major methods of protection are: **maintaining a safe distance, de-energizing AND grounding lines, having the power company install insulating sleeves.** Have a power company rep on the site.

10. **UNDERGROUND POWER LINES CAN KILL.** Call before you dig to late all underground cables. **Hand dig within three feet of cable location!**

*From “Construction Focus Four: Electrocution, Safety Tips for Workers”*