



## eSafetyLine

### **Electricity Basics**

The problem with electrical injuries and fatalities is that everyone on the worksite is at risk from them, not just electricians. This is why it's important to review some electrical basics. Electrical incidents consistently rank in OSHA's top 4 for the cause of injuries and illnesses. The fact is a very small amount of electricity can be fatal. Another fact is that many of these incidents could be avoided by remembering some basics:

- Electrical current won't flow unless it has a complete path or circuit that returns to its source, like a battery or transformer
- Electrical current flows through conductors like concrete, metal and more importantly YOU
- Current flowing through your body causes damage along its path, this is the electric shock you experience
- Insulators, like plastics or rubber, resist the flow of electricity
- Electricity and water mix to cause even greater injuries. Water is an excellent conductor so any outlets, tools or extension cords must be kept away from any water source.

The leading causes of electrical accidents can be placed in one of two categories: Unsafe Acts and Unsafe Equipment. There are usually two reasons for unsafe acts; we don't know better and we know better but do it anyway. Some basic ways to avoid unsafe acts include:

- Never fail to de-energize, lockout and tagout hazards during maintenance, repair and inspection
- Never use defective or unsafe tools
- Don't use tools that are defective or unsafe
- Never remove the ground pin to make a 3-prong plug fit a 2-prong outlet
- Don't overload outlets with appliances or tools
- Don't use the electrical cord on a tool to raise or lower it.

Unsafe equipment can lead to injuries for much the same reasons as unsafe acts. We don't take the time to inspect equipment so we don't know there is a problem or we've done the inspection, found damage or a defect but use the tool anyway. This is done many times to try to save time and/or money but in the long run it will cost much more in injury and time lost.

Over the following weeks injury case studies will be looked at. None of these accidents involved electricians doing electrical work, just various workers showing up for work each day and not making it home at the end of the day.

### **Discussion Questions**

Why does the human body act as such a good electrical conductor?

What are the two reasons for unsafe acts?

# MEETING / TRAINING ATTENDANCE ROSTER

COMPANY: \_\_\_\_\_

\_\_\_\_\_ SAFETY MEETING

JOB/DEPT: \_\_\_\_\_

\_\_\_\_\_ SAFETY TRAINING

DATE: \_\_\_/\_\_\_/\_\_\_

TIME: \_\_\_\_\_

TOPICS ADDRESSED: \_\_\_\_\_

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## EMPLOYEE'S SIGNATURES

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EMPLOYEE SUGGESTIONS AND RECOMMENDATIONS: \_\_\_\_\_

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ACTION TAKEN: \_\_\_\_\_

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Supervisor's Signature

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Date

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Safety Coordinator's Signature

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Date