

# Electrical Shock

## GENERAL DISCUSSION

Electrical shock kills and injures hundreds of workers each year. Most of these accidents happen because people don't look, don't think or just don't understand the shocking power of electricity. Voltage, current and resistance are the basic terms used when talking about electricity. Voltage is the force that causes the current to flow. Current (amperage) refers to the amount of electricity that is flowing. Resistance denotes the restrictions that try to slow down or stop the flow.

Electrical shock can only occur when a part of the body completes a circuit between a conductor and another conductor or a grounding source. The voltage does not cause death or injury; the damage is done by the amount of current that flows through the body when the contact is made. Of course, the higher the voltage, the greater the amount of current. Some people have survived shocks of several thousand volts, while voltages have killed others as low as 12.

The dry outer skin of the human body offers extremely high resistance to electrical flow. However, this resistance is reduced to almost zero when the skin is wet, especially if the skin is wet because of perspiration.

Electricity and proper grounding work together for safety. A ground is a conducting connection between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

If your body is sweaty or damp, an oversensitive ground within it is created, which easily causes electrical shock. One way to keep the body's resistance high is to keep it dry, particularly the hands and feet, which might make the contacts and be instrumental in completing the circuit. This can be accomplished by wearing rubber gloves, boots and rubbers.

Effects of electrical shock depend mainly on the total amount of current flow and the path of the current through the victim's body. To prevent electrical shock, which can cause several types of injuries, make sure that your body cannot become part of the electrical flow and the path of the current. An important phase of electrical safety is to know how to help an electrical shock victim. First, stop the current flowing from the circuit through the victim's body, if it hasn't already been done. Often, particularly in cases of low-voltage shock, victims are unable to pull away from the source of current.

If the victim is still in contact with the current, disconnect or de-energize the circuit, if possible. If this cannot be accomplished, obtain a nonconductive item, such as dry clothing, dry rope or a dry stick, and remove the victim from the source of the current. Then call or send for help. Next, check to see if the victim's heart or breathing has stopped. Give the required first aid until professional help arrives.

We can reduce the risk of accidents in our work place by keeping in mind these guidelines:

Never use water to put out an electrical fire; water can cause a fatal shock. Use a Class C-rated fire extinguisher for electrical fires; shut off the source of power as quickly as possible.

Inspect the area you're working in for electrical hazards.

Don't overload circuits. Keep electrical equipment away from water and dampness.

Check electrical cords before, during and after each use for fraying and other signs of wear and defects.

Be sure to tag out and lock out switches when working on equipment. Remember, electricity can be an ally or an enemy. Treat it with respect and it will provide the service you expect.

## **GENERAL SAFETY REVIEW**

This is a time to review all safety concerns, not just today's topic. Keep your notes on this page before, during and after the safety meeting.

Are you aware of any safety hazards from any other crews? Point out any hazards other crews are creating that this crew should know about. Tell the crew what you intend to do about those hazards.

Do we have any other safety business? Discuss any past issues or problems. Report any progress of investigations and action taken.

Have there been any accidents, near misses or complaints? Discuss any accidents, near misses, and complaints that have happened since the last safety meeting. Also recognize the safety contributions made by members of the crew.

Please remember, we want to hear from you about any health and safety issues that come up. If we don't know about problems, we can't take action to fix them.

## **ENDING THE MEETING**

Circulate Sign-Off Form.

Assign one or more crew member(s) to help with next safety meeting.

Refer action items for follow-up. (Use the sample Hazard Report Form in the Reference Section of this binder, or your company' s own form.)

Do you have any Safety Recommendations?

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Do you have any Job Specific Topics you would like us to discuss?

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Have you reviewed the M.S.D.S Sheet for this safety topic? Yes\_\_\_\_ No\_\_\_\_  
N/A\_\_\_\_

Comments:

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