

S9 – Toolbox Talk

Electricity – Avoiding Electric Shocks

Electrical hazards can be found in all industries. The human body has a low resistance to electricity, making it a good conductor, like most metals. Unlike metals however, the human body does not respond well when electricity passes through it. Physical results include thermal burns, disruption of normal heart activity, severe muscle contractions, and even death.

The most common and serious electrical injuries occur when electrical current flows between the hands and feet. This happens when a person touches an energised conductor. The electrical energy is looking for the shortest path to the ground, and it will pass through the body to the feet to reach it. When this occurs, a person's heart and lungs are frequently damaged by the electrical energy.

Placing an insulator between the energy and the point of physical contact is one method of protection. Porcelain, rubber, pottery and dry wood offer substantial resistance to the flow of electricity, and are therefore good insulators. These materials can often protect a person from electrical shock.

Precautions for avoiding electrical shocks include, but are not limited to, the following:

- Always make sure electric tools are properly grounded or double insulated. The double-insulated tool must have an undamaged outer case and be clearly labelled as 'double insulated' by the manufacturer
- Always check to be sure the grounding system is complete. Unless they are designated as double insulated, grounded power tools must be attached to a grounded service circuit. If there is any doubt about the grounding, ask a qualified electrician to test it
- Use heavy-duty grounded extension cords. These cords have two layers of insulation, with reinforcement between the layers. They are less susceptible to damage than household type cords
- Avoid mixing water and electricity. Keep not only cords, tools and working/walking surfaces dry, but also keep your hands and feet dry. The electrical resistance of wet skin is at least 100 times less than dry skin. Wet skin greatly increases the likelihood of severe shock if a person comes into contact with a live circuit. If you must work around water, connect to a RCD (residual current device, previously known as an earth leakage circuit breaker) to automatically shut off the current if there is an abnormal current flow
- Never work on or around a live electrical circuit. Lock out the power so that only you have control over energising the machine or equipment. Do not take chances.

Remember, electricity strikes without warning — always play it safe!



Training register

Date

Name of attendee

Signature

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