



WORKPLACE SAFETY

A W A R E N E S S C O U N C I L

Common Electrical Hazards

It's Your Life – Protect it!

Between 1992 and 2001 an average of 4,309 employees lost time away from work because of electrical injuries. Even if an injured employee doesn't die as a result of their exposure to electricity, the recuperation period can be long, painful and expensive.

How Much Electricity is Dangerous

Current through the body, even at levels as low as 3 milliamperes, can also cause injuries of an indirect or secondary nature in which involuntary muscular reaction from the electric shock can cause bruises, bone fractures and even death resulting from collisions or falls (i.e. fall from a ladder after receiving a small shock).

Current	Effect
0.5 - 3 mA	Tingling sensations
3 - 10 mA	Muscle contractions (painful)
10 - 40 mA	"Can't Let Go" phenomena
30 - 75 mA	Respiratory paralysis (possibly fatal)
100 - 200 mA	Ventricular fibrillation (likely fatal)
200 - 500 mA	Heart clamps tight
1.5 A	Tissue and organs begin to burn

Typical effects on the human body based on exposure

Fast Fact: A 15 amp circuit breaker was designed to protect equipment – not people!

Burn Hazards Associated With Electricity

Human skin provides great protection from normal elements; however human skin provides poor protection from extreme heat which is a byproduct of exposure to electricity. Typically there exist three types of burns:

Electrical burns happen when electric current flows through tissues and organs.

Arc burns result from high temperatures (up to 35,000 F) when an arc flash event occurs.

Thermal burns typically happen when skin touches a hot surface

Fast Fact: It doesn't take much for human skin to burn – in fact an exposure of 203 F for just one-tenth of a second (6 cycles) is enough to cause a third degree burn!

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