



Electrical Safety Fact Sheet

On average, 60 workers are killed by electric current in construction every year in the U.S., and many more are injured. Over half of the deaths are from working on energized (“live”) electric circuits without proper protection - often when it was not necessary to work “live.” At least one-third of electrocutions occur at low voltage, under 600 volts. Other electricity-related hazards include electric shock and burns, arc-flash burns, arc-blast impacts, and falls.

- **Electric shock and burns** – An electric shock occurs when electric current passes through your body. This can happen when you touch an energized part. If the electric current passes across the chest or head, you can be killed. At high voltages, severe burns can result.
- **Arc-flash burns** – An electric arc flash can occur if a conductive object gets too close to a high-amp current source or by equipment failure (for instance, while opening or closing disconnects). The arc can heat the air to temperatures as high as 35,000°F, and vaporize metal in the equipment. The arc flash can cause severe skin burns by direct heat exposure and by igniting clothing.
- **Arc-blast impacts** – The heating of the air and vaporization of metal creates a pressure wave that can damage hearing and cause memory loss (from concussion) and other injuries. Flying metal parts are also a hazard.
- **Falls** – Electric shocks and arc blasts can cause falls, especially from ladders or unguarded scaffolding.

Protect Yourself

Plan every job. Decide on your approach and step-by-step procedures. Write down first-time procedures. Discuss hazards and procedures in a job briefing with your supervisor and other workers before starting a job. Your employer should already have or should develop a permit system for working on live circuits, if a circuit must be worked live.

- Identify the hazards. Complete a job hazard analysis. Identify steps that could create electric shock or arc-flash hazards.
- Minimize the hazards. De-energize the equipment or insulate or isolate exposed live parts so you cannot contact them. If this is impossible, get proper personal protective equipment (PPE) and tools.
- Anticipate problems. If it can go wrong, it might. Make sure you have the right PPE and tools for the worst-case scenario.
- Get training. Make sure you and everyone working with you is a qualified person with appropriate training for the job.