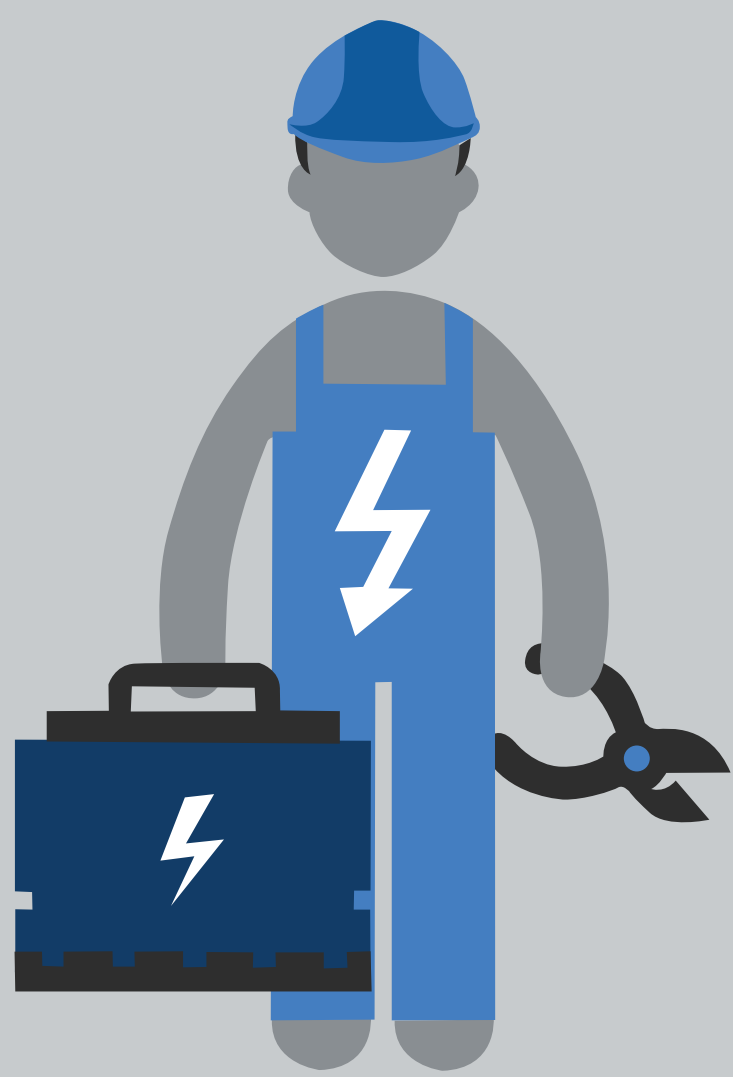



FAST Guide to Electrical Safety



The Dangers of Electricity

Our lives and our jobs have become dependant on electricity 24 hours a day. We often take for granted how much we rely on the electricity in both our personal and professional lives. It is important to remember that electricity is a dangerous and powerful force that can cause injury and death if not properly handled.

Take a look at some common electrical issues and think about how you can protect yourself and your employees from these hazards each day.


52%
of electrical fatalities happen to workers in the construction industry


1,100
severe burns are caused by contact with electricity each year


325 people die each year from electrocution on the job

Written Electrical Safety Program

It is the employer's responsibility to prepare and implement a well thought-out and documented electrical safety program to protect their employees. For the best results, it is important that all personnel are involved in creating and committed to implementing the program.

Include Procedures For:

- ✓ **Awareness** of electrical hazards and self-discipline of employees
- ✓ Identification of **hazard/risk evaluation** procedures
- ✓ Identification of electrically **safe work procedures, tools and PPE**
- ✓ Identification of **electrical safety principles**, one of which is safety by design



Common Electrical Hazards

From 1992 through 2002 there were **3,378 workers who died** from on-the-job electrical injuries. Watch out for areas in your workplace that could present these common electrical hazards.

Shock

Electric shock occurs when the body becomes part of an electrical circuit. The human body conducts electricity well, which means direct contact with an electrical current can be deadly.

Damages:

Cardiac arrest
Muscle, nerve and tissue destruction
Thermal burns
Immediate death

Possible Causes:

Contact with exposed wiring
Poking metal objects into electrical outlets
Lightening strikes
Contact with live power lines



Arc Flash

An arc flash happens when electric current flows through an air gap between conductors. An arc flash can expel large amounts of deadly energy causing a great deal of damage to personnel and equipment.



Damages:

Severe skin burns
Damage to eye sight
Thermal burns
Immediate death

Possible Causes:

Sparks due to breaks or gaps in the insulation
Equipment failure
Dust, corrosion or other impurities on the conductor
Voltage transients/spikes

Arc Blast

During an arc flash the rapidly expanding gases and heated air may cause dangerous blasts, pressure waves or explosions rivaling that of dynamite. This is known as an arc blast.

Damages:

Concussion or injury from being blown off your feet
Ruptured eardrums and hearing loss
Exposure from flying debris
Severe skin burns

Prevention:

Never work on a "hot" device
Test voltage to be sure it is off
Apply lockout/tagout devices
Apply grounding devices where applicable



Common Electrical Violations

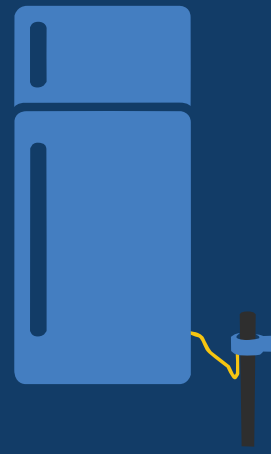


Equipment Misuse

OSHA requires all electrical equipment to be used or installed in accordance with any instructions included in the listing or labeling. For example, if a box fan is labeled for consumer use, it should not be used in any kind of commercial or industrial application.

Flexible Cords & Cables

Flexible electrical cords, such as extension cords, are designed for temporary use NOT permanent use. Flexible cords also should not be used through holes in walls or ceilings, through doorways or other places where they may present additional hazards.



Improper or Lack of Grounding

Grounding is intended to protect people from electrocution and helps to prevent electrical fires. If wiring inside a piece of equipment such as a refrigerator comes loose and contacts the metal frame it becomes energized, posing a threat to anyone that touches the equipment. A proper ground diverts the energy from the metal frame safely to the earth.

Guarding of Live Electrical Parts

OSHA requires that all energized conductors >50 volts and within eight feet of the floor or working surface be guarded against accidental contact. Typical violations include exposed electrical wiring, unguarded receptacles or unguarded fluorescent lighting.



Stop At Your Local Store

Need some extra wire to finish up an electrical fix at your facility or are you looking for some new fuses to keep your machines running smooth? Stop in to your local Fastenal store and let them help you keep your employees safe today!

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Sources:
<http://www.ameriburn.org/Preven/ElectricalSafetyEducator'sGuide.pdf>
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<http://arcadvisor.com/faq/what-is-arc-flash>
<http://www.workplace-safety-nc.com/articles/Common-elec-inst-viol.html>