GFCIs

On a construction site, power tools and extension cords make the work you do much easier. However, they can also create electrical hazards, especially if they aren't maintained well or if you use them incorrectly. When things go wrong, ground-fault circuit interrupters (GFCIs) can protect you from deadly electrical shocks.

A GFCI is a fast-acting circuit breaker that senses tiny imbalances in the current that flows through a circuit. It constantly compares the current flowing **to** the tool, with the amount returning **from** it. Whenever the amount going to the tool differs from the amount returning, the GFCI opens the circuit and interrupts the flow of electricity. GFCIs are fast and can respond in as little as 1/40th of a second.

You could be exposed to electricity if: insulation on a cord is damaged, a component or insulation inside a tool fails or wears out, you pick up a tool that's sitting in water, or you touch a tool with wet hands. In all of these cases, electricity could flow through you instead of back through the GFCI. This is when the GFCI detects the imbalance and interrupts the circuit before you get shocked, burned, or killed.

There are other reasons that a GFCI could trip, or interrupt the circuit. A large motor or other inductive load could trip the GFCI. The tool could be damaged. The GFCI could be broken or installed incorrectly. The circuit could be overloaded.

Importantly, when a GFCI trips, don't just reset it. Take the time to figure out why it tripped. If a tool is causing the problem, either tag it and remove it from service or make sure someone who is trained and authorized fixes it. If a cord is frayed, it probably needs to be replaced. If you can't fix the problem, talk with your supervisor.

There are several types of GFCIs available. The most common is the **receptacle-type GFCI**, where the GFCI is part of the outlet that you plug into. There are also **circuit breaker GFCIs** that can be installed in an electrical panel. These GFCIs provide ground fault protection on entire circuits. Some tools come with their own **built-in GFCIs**. Typically, these tools have a GFCI built into the plug on the power cord. There are also **portable GFCIs.** You simply plug the device into an outlet and then plug your extension cord or power tool into the device. These GFCIs are small and can easily be used where there are no permanent GFCIs installed. It's a good idea to keep a portable GFCI in your toolbox just in case you need it.

Be sure that you use GFCIs and that you use them correctly, so you're really protected from electrocution. Disabling or bypassing a GFCI could get somebody (possibly you) hurt or killed. Test GFCIs monthly, especially portable ones. When you test circuit breaker GFCIs in an electrical panel, make sure no one is depending on that circuit during the test.

SAFETY REMINDER

You probably have GFCIs in your kitchen, bathroom, and laundry area, where electrical equipment is near water.

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Chemical Spills

Despite our attempts to prevent chemical spills and leaks, they still happen on construction sites. Some chemicals (like some finishes and solvents) that are used in construction can cause health, physical, and environmental hazards. Whenever you work with chemicals, you need to know how to respond in case of a spill or leak.

The information you need is in the Safety Data Sheet (SDS). Read it before you use any chemical. Section 6 of the SDS is titled "Accidental Release Measures." It explains what to do if there is a spill, leak, or other release. It includes information on containing and cleaning up a spill to minimize damage to people, property, and the environment. When you're reading, keep in mind that the recommendations could be different depending on whether the spill is large or small.

Let's go over a few basics for dealing with chemical spills, leaks, and disposal.

- If the spill cannot be readily contained, or if it presents an immediate danger to life or health, leave the area and call for help.
- Protect yourself: Wear the necessary PPE.
- Evaluate the situation: Is anyone in imminent danger? Is the spill moving toward a drain, a waterway, or people? Do you need to alert others? Call 911 if necessary.
- Notify your supervisor. Give a description of the incident, and let him know how much was spilled and if the spill is spreading.
- Secure the work area. Keep sparks and flames away from the spill site.
- Control and contain the spill if you are trained to do so. Often, the best thing to do is to dam or block the spill with absorbent materials.
- Clean up and decontaminate. Use equipment that is compatible and appropriate for the specific chemical.
- Be sure you decontaminate your PPE before you remove it.
- Make it a point to handle chemicals safely so that you don't have to deal with the aftermath of a spill or leak.

It's worth repeating: Read and understand the SDS **before** you work with a chemical so you know what to do **before** a spill happens. The SDS will have information on:

- What PPE you should have available.
- What emergency procedures you should plan for.
- The methods and materials (like drain covers and sorbents) you'll need to contain spills.
- Specific procedures for cleanup, including actions to avoid, like using water or letting the spill dry out.

SAFETY REMINDER

Personal protective equipment isn't just for spills. Make sure you wear the right PPE when you use chemicals too.

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Safety and Sharps

Construction work requires that you carry, handle, and use sharp tools like knives, screwdrivers, razor knives, punches, and all kinds of saws, to name a few. Just because sharp tools are a familiar part of your job, doesn't mean you can let your guard down. Use safe work practices when using sharp tools.

Don't use a sharp tool unless you have been trained to use it correctly and safely. You need to know how to use tools safely, even ones that seem as simple as a knife or a chisel. If you notice that a co-worker is using a tool in an unsafe way, take a minute to help him out before he gets hurt.

Choose the right tool for the job. Using substitutes or making do increases your chances of getting hurt. For instance, if you use a chisel as a screwdriver, the tip could shatter and a piece could end up stuck in your eye. Creativity is great, but don't be creative with tools. Use them only as they were designed to be used.

Inspect tools before each use to see if they need sharpening, maintenance, repair, or replacement. Look for defects like cracked, splintered, or broken handles. Don't use chisels or wedges that have mushroomed heads. Replace blades that have nicks and gouges, or grind out the defects. Remove cracked saw blades from service. Never use a defective tool.

Keep cutting tools sharp. Dull tools can actually be more dangerous than sharp ones. They usually require more force to make them cut, and pushing too hard leads to problems. Keep sharp edges covered or retracted to prevent injuries from accidental contact and to prevent damage to the tools. Keep all tools clean and dry, and store them properly.

Transport tools safely. Never carry sharp tools in your pockets. A fall or just sitting down could cause a nasty puncture wound. Use a toolbox or a toolbelt. Don't carry sharp tools in your hands while climbing a ladder or scaffold. Instead, use your hands to climb safely, and then use a bucket and hand line to bring the tools up to you.

Whenever you work with sharps:

- Wear the right PPE. Consider safety glasses, cut-resistant gloves, gauntlets, and chaps.
- Slow down and think about where the blade can go and where your hands will be.
- Always cut away from yourself.
- When you put down a sharp tool, point it away from aisles and walkways, and don't let the handle stick out over the edge of the bench.
- Don't wave sharp tools around or use them as pointers.
- Use blade changers and carriers when you change blades and cutters.
- Pass a sharp tool by handing the other person the handle first. Never toss sharp tools.

SAFETY REMINDER

Stay focused. Distractions are dangerous.

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Summertime and Hot Weather

Unlike school kids who get summer vacation, construction workers are usually very busy in the summertime. The summer brings high temperatures, humidity, and the threat of severe weather.

Since your work requires that you spend the day outdoors exposed to the heat and sun, you need to **stay hydrated**. Drink plenty of cool water throughout the day. You should drink four to eight ounces of water every 15 to 20 minutes. Don't wait until you're thirsty to get something to drink. Eat foods that have high water content like fruits, vegetables, and yogurt. Don't let your body lose fluids faster than you replace them.

Keep cool and **protect yourself from sunburn**. Wear lightweight, loose-fitting, light-colored clothing. Don't forget to put sunscreen on your skin. Your face, nose, ears, and neck are particularly vulnerable.

Remember to keep an eye on each other and **take breaks in the shade** or in a cool place during the hottest part of the day. Make sure you cool down before anyone develops symptoms of heat-related illnesses like:

- dizziness
- heat cramps
- nausea
- weakness

Call your doctor if you experience nausea, vomiting, headache, weakness, or clammy skin—you may have heat exhaustion. **Call 911** if someone's body temperature is elevated or he or she is confused, irritable, or dizzy, or has heart rhythm problems, nausea, or vision problems—this could be heat stroke, which is a medical emergency.

Along with sun, summer also brings severe weather. **Thunderstorms** produce strong winds and heavy rains, and remember that every thunderstorm creates lightning.

Watch out for strong winds: Tie down tarps and loose materials. Use caution handling or moving large items like plywood. Stay off of roofs and other elevated surfaces.

Lightning is one of the top three storm-related killers in the U.S. At the first sign of a thunderstorm, lower crane booms and move away from anything tall or high since these objects can act as lightning rods. This includes ladders, rooftops, and scaffolding. Stay off of and away from heavy equipment like tractors, bulldozers, cranes, and backhoes.

There is no safe place outside when thunderstorms are in the area. If you can hear thunder, that means lightning is close enough to strike. When thunderstorms are expected, you may need to cancel or postpone outdoor activities. When the storm is nearby, stop what you are doing and seek shelter in a substantial building or a hard-topped metal vehicle. After the thunder and lightning stop, wait 30 minutes before going back outside.

SAFETY REMINDER

Never drive across a flooded road. Cars can start to float in just several inches of water.

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