

Nine Electrical Hazards to Watch Out For

By Rick Pedley | Monday, September 13, 2021



Raw electricity tends to be one of the most dangerous aspects of working on a construction site. Workers use many electric tools in the field, while electricians, engineers and repair technicians are responsible for connecting the site to the electrical grid.

These tasks come with more than their fair share of risks. Any encounter with electricity can lead to nerve damage, injury and even death. Approximately 247 workers die every year after coming in contact with an electrical current, and more than half of these incidents involved construction workers.

There are nine electrical hazards to watch out for when working on a construction site.

1. OVERHEAD POWER LINES

Overhead power lines are common on residential streets, highways and around businesses. These lines carry a massive charge of electricity, and transmission line voltages vary from 44,000 to over 765,000 volts. Workers should keep their distance from overhead power lines whenever possible. They should stay at least 10 feet from the wires themselves. Companies should do their best to keep teams away from these structures whenever possible. Nothing should be stored near or under the power lines. Crews should also set up warning signs and safety barriers alerting workers to these danger zones.

Few things could be more dangerous than a downed power line, especially if the power line is still hot or carrying a charge. All downed power lines should be assumed 'live' until proven otherwise. It's best to call the local utility company when this occurs.

2. DAMAGED TOOLS AND EQUIPMENT

Workers need access to quality tools and equipment when working with or around electricity. Everyone on-site should know how to identify and report damaged tools in the workplace. Employees should have time to inspect their gear before starting the task at hand. Cracks, cuts, rips and tears can leave workers vulnerable to the dangers of electricity. Double insulated tools provide the best protection. They come with a symbol that shows a square inside a square.

When repairing machines or pieces of equipment, it's best to use the lockout/tagout system. This ensures that the machine cannot physically be turned on to prevent electrocution while someone is working on it. A person must use a key to access the controls. In the case of portable power tools, many companies advise workers to cut the connector off of the damaged tool to prevent use until proper repairs have been performed.

3. INADEQUATE WIRING

Workers should be trained to know how to recognize common electrical hazards to prevent putting themselves or their coworkers at risk. Electrical equipment, outlets and cords should be labeled according to amperage and voltage levels. Different sizes of cords come with different electrical ratings. Ideally, workers should be able to recognize these sizes before energizing the tool. Power tools should be stored and used with the proper extension cord to prevent confusion. Everyone should be on the lookout for inadequate wiring, tangled cords, frayed or exposed wires, and other signs that something isn't connected properly.

4. OVERLOADED CIRCUITS

Every construction site needs power, but overloading a circuit can be a recipe for disaster, including fires caused by overheating. Teams should use proper circuit breakers when connecting more than one device to an outlet. This helps protect the circuit from excess current. It's never a good idea to use surge protectors or power strips on construction sites. Instead, companies should use a 3-way extension with GFCI for added protection.

5. EXPOSED ELECTRICAL PARTS

Nothing should be exposed when working on a construction site. Hanging wires, loose connections and dangling outlets should be a warning sign that something is wrong. Employees should report exposed electrical parts to their manager as soon as possible. Everyone should also be on the lookout for faulty parts and equipment, such as circuit breakers with missing panels or a setup with exposed wires.

When inspecting and handling wires, the outer insulation should be intact to prevent electrocution. Openings should remain shut to prevent the spread of dust and dangerous accidents. Temporary lighting should be guarded to decrease the chance of fire and broken bulbs.

6. IMPROPER GROUNDING

Grounding is key to preventing unwanted transmission. Wires and electrical equipment should come with grounding in case of a bad connection. Grounding provides an alternate path for the electricity if a breakdown should occur, so the system can reach equilibrium if there are more hot charges than neutral. This gets rid of excess charges that might otherwise run through wood, metal and other surrounding equipment.

The ground pin is supposed to return excess electricity to the ground. Employees should never move or touch the ground pin. It can lead to shock or electrocution while making the entire system unsafe.

7. DAMAGED INSULATION

Wires come with insulation, which protects the user from the electrical conductors traveling underneath. Workers should never use poorly insulated wires. Fixing them with tape is not the answer either. It's best to replace the wire outright. Wires should be kept out of harm's way so the insulation stays intact. Teams should avoid hanging wires on sharp objects, tucking them in windows or leaving them in high-traffic areas where they could get damaged.

8. WET CONDITIONS

Electricity and water are a hazardous match. Moisture and water should be kept away from electrical parts and equipment to avoid injury. Workers should never go near a piece of equipment or power line that's been exposed to moisture. Damaged insulation increases the risk of electrocution, allowing the water to come in contact with the conductors.

When working outdoors, using electrical equipment in wet or hazy conditions puts a premium on proper and secure electrical connections. All circuits should be protected by GFCI's. Keep tools, wires and equipment away from damp areas. Set up a temporary shelter to reduce the spread of moisture.

9. LACK OF PROPER TRAINING

Working with or around electricity requires training and experience. Sending inexperienced personnel into the field can put the entire team at risk. If someone doesn't know how to complete a task, he or she should ask for assistance before trying to fix the situation themselves. New hires can shadow senior team members until they feel more comfortable working on their own. Safety should always outweigh speed and efficiency. Managers should give their workers the time they need to inspect their surroundings and electrical equipment before getting down to business. A few extra minutes on the job can make a world of difference.

Construction sites are full of hazards, but electrical problems can be difficult to spot to the untrained eye. Everyone should know the basics of electric safety before starting their shift. Watch out for these electrical hazards on and off the job.



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