



Border
Home Inspections
"Inspected Once, Inspected Right."

Aulden Reid Certified Residential/ Commercial Inspector

Q: What is a Ground Fault Circuit and what does it do?

A: A Ground Fault Circuit or GFI is an electrical safety device which has been proven to save lives. I decided to discuss this question here as I recently experienced a near miss with the power of electricity at my house. My four year old knew she and her sister could not swim in the pool without first disconnecting the power to the filter pump. She took it upon herself to unplug the cord (a task no one ever showed her) and was shocked as a result. While this might seem trivial to some, I realize we were lucky she was not killed. I had the cord plugged inside the patio doors into a regular receptacle temporarily until I could get around to installing a GFI on the outside wall of our home. It was by the Grace of God that things did not turn out worse for our daughter. I tell this story to put a face on the dangers of electricity. As an inspector and as a parent I strongly recommend that you have GFI's installed anywhere near water sources to prevent a tragedy in your home.

So now more to the point, what exactly is a GFI and how does it work. GFIs are electrical devices that are designed to detect ground faults (when current is "leaking" somewhere outside its intended pathway). If your body provides the path to ground for the leaking current, you could receive a shock or be electrocuted. The GFI is designed to constantly measure the flow of electricity on the load and neutral side of the circuit. If it detects a difference of more than 5ma it will trip. At 5ma you will only feel a tingle and will know this little device might have just saved your life.

It is important to recognize that a standard household circuit breaker is designed to trip when it reaches 15 amps. This breaker is designed to protect the wire from overheating and causing a fire, it is not intended to protect you. You can be killed if exposed to as little as 50 milliamps (ma). If one amp is 1000ma imagine what happens if you are exposed to the full force of a 15 amp circuit.

Today's electrical code requires GFI circuits in the following places:

- All kitchen counter outlets within 59" (1.5m) of the sink.
- All outlets within 59" (1.5) of a wash basin wherever it is located.
- All outdoor outlets including those used for a carport if facing outdoors and within 98.5" of the finished grade.
- All bathroom switches within 39.4" (1m) of a bathtub or a shower stall.

As you can see, there are a lot of GFI's in one house. If your home was built prior to this code requirement it is likely that you don't have very many GFI's installed. While your home may not be required to meet the current code, I once again recommend you consider the safety benefits of the GFI and have them Professionally installed ASAP.

P.S. Any new wiring is subject to electrical permits and of course the latest code.



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