

Have you ever experienced an electric shock?

If you have, it's because your hand or some other part of your body came in contact with a source of electrical current, and your body provided a path for the electrical current to ground, so you got shocked.

An unintended path between an electrical source and a grounded surface is called a "Ground Fault". Meaning that the electricity or current is leaking or going somewhere other than where it's suppose to go. The path that the current takes to ground is critical. If it's a piece of equipment, the equipment could be damaged or destroyed. If it's you, you could be injured,

You would think that a shock of 1,000 volts would be more deadly than 100 volts. But that's not necessarily so. People have been electrocuted by ordinary house voltages of 110 volts.

The real measure of a shock's intensity is the amount of current or amperage that travels though your body, and not the voltage. Any amount of current over 10 milliamps (0.01 amp) is capable of producing painful to severe shock, currents between 100 and 200 mA (0.1 to 0.2 amp) are lethal.

A ground fault circuit interrupter or GFCI is an electrical device that protects people by detecting potentially dangerous ground faults and quickly shutting off the power. The GFCI device works in essence by monitoring the current balance between the current leaving the GFCI device and the current returning to it. If the difference between the outgoing and returning current is equal or less that 5 milliamps (5/1000 of 1.0 amp) then everything is OK and the device stays on. Any unbalance over 5 milliamps will disconnect the power and prevent the potentially fatal shock.

WHERE GFCIs SHOULD BE CONSIDERED

Per most community codes and the NFPA National Electrical Code

210.8 Ground-Fault Circuit-Interrupter Protection for Personnel

(A) Dwelling Units All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in (1) through (8) shall have ground-fault circuit-interrupter protection for personnel.

- (1) Bathrooms
- (2) Garages
- (3) Outdoors
- (4) Crawl spaces — at or below grade level
- (5) Unfinished
- (6) Kitchens — where the receptacles are installed to serve the countertop surfaces
- (7) Laundry, utility, and wet bar sinks — where the receptacles are installed within (6 ft) of the outside edge of the sink

(8) Boathouses

Owners of homes that do not have GFCIs installed in all those critical areas specified in the latest version of the Code should consider having them installed. A GFCI should be used whenever operating electrically powered garden equipment (mower, hedge trimmer, edger, etc.). Consumers can obtain similar protection by using GFCIs with electric tools (drills, saws, sanders, etc.) for do-it-yourself work in and around the house.

All GFCIs should be tested once a month to make sure they are working properly and are protecting you from fatal shock. GFCIs should be tested after installation to make sure they are working properly and protecting the circuit.

To test the receptacle GFCI, first plug a nightlight or lamp into the outlet. The light should be on then, press the "TEST" button on the GFCI. The GFCI's "RESET" button should pop out, and the light should go out.

If the "RESET" button pops out but the light does not go out, the GFCI has been improperly wired. Contact an electrician to correct the wiring errors.

If the "RESET" button does not pop out, the GFCI is defective and should be replaced.

If the GFCI is functioning properly, and the lamp goes out, press the "RESET" button to restore power to the outlet.

Romitti Electric Corporation, www.Romitti.com, offers a Free 12-Point Home Electrical Service Visual Inspection. Romitti serves Chicago's suburban North Shore communities and is family owned and operated. Call 847-831-4471 for your appointment.