MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND FORESTRY EXPERIMENT STATION

MAFES DAWG TRACKS

The National Electrical code states that a "ground fault" is a conducting connection (whether intentional or accidental) between any electrical conductor and any conducting material that is grounded or that may become grounded. Electricity always wants to find a path to the ground. In a ground fault, electricity has found its path to the ground, but it is a path the electricity was never intended to be on, such as through a person's body.

What is a Ground Fault Circuit Interrupter?

A ground fault circuit interrupter (GFCI) can help prevent electrocution to a person a lot quicker than a regular fused circuit. A GFCI outlet constantly monitors electricity flowing in a circuit, to sense loss of current. If a person's body starts to receive a shock, the GFCI senses this and cuts the power before he or she can get injured.

GFCIs are generally installed where appliances or tools may accidently come in contact with water, damp conditions, or within 6 feet of a sink. In work atmospheres, they are usually found around sinks or outdoor work areas. In the home, you find them in kitchens, baths, and laundry rooms.

How Does a GFCI Work?

The "GFCI" will sense the difference in the amount of electricity flowing into the circuit to that flowing out, even in small amounts of current as small as 4 or 5 milliamps. The GFCI reacts quickly (less than 1/10 of a second) to trip or shut off the circuit.

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Types of GFCIs -

- The most often used is the "receptacle-type" GFCI, similar to a wall receptacle.
- Circuit breaker GFCIs are often used as replacements for standard circuit breakers and provide GFCI protection to all receptacles on that individual circuit.
- Temporary or portable GFCIs are frequently used in construction and outdoor settings with electric tools, mowers, trimmers and other tools. Theses should not be used as a permanent alternative to a regular GFCI.

How and When Do You Test a GFCI?

GFCIs are electronic devices that can be damaged or wear out. Most GFCIs should be tested monthly to ensure that they are in good working condition. On a receptacle GFCI, pushing the TEST button should cause the RESET button to pop up. (Remember to push the RESET button to re-establish power and protection). For the circuit breaker type of GFCI, pushing the TEST button should cause the handle to move to the tripped position. (Remember to reset the handle to re-establish power and protection). The test is the same, as receptacle type, for a portable GFCI. However, portable ones should be tested before each use.

Sources:
http://www.safeelectricity.org