



Don't Be Shocked By This

Dear Dave: I have known about GFI requirements in a home for some time, but I just learned that AFCI's are also required. Could you please explain?

Answer: A Ground Fault Circuit Interrupter (GFCI) protects you from an accident where you, the human being, might 'ground' an electrical circuit with your body.

The most likely case is where an electrical current may come in contact with water and you are personally connected to the water at the same time – e.g. your electric toaster falls into the kitchen sink while you are washing dishes.

This is why all kitchen counter top outlets, and even some island outlets near the counter, must have GFCI protection, as well as all bathroom and home exterior outlets. Should you or your children create a ground from an electric current, the circuit will shut off in

1/40000th (one forty thousandth) of a second. Good news for people using electric hair dryers in the bathtub.

An 'arc' of electricity is a different story. An electrical arc is an interruption of the normal flow of electricity in a circuit which can cause a fire. Natural arcs occur whenever a light switch is turned on or off, but other arcing (e.g. a shorting between wires) can be very dangerous and is not protected by a conventional circuit breaker.

An Arc Fault Circuit Interrupter (AFCI) is, in effect, a newer type of circuit breaker, required in bedroom circuits of all new construction since 2002, and then on all circuits from 2010. A home inspection should raise this issue if your electrical panel does not meet current standards because the AFCI is in fact a safety issue in the panel. Home inspectors may have slightly different recommendations on older homes where the new code did not apply at the time.

Newer homes actually now have dual purpose breakers throughout. In summary, the primary purpose of a GFCI is to protect people personally contacting an electrical circuit. An AFCI is primarily designed to prevent an electrical fire.

Dave

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