



Quick Reference Guide: Home Safety Technology



Arc Fault Circuit Interrupters (AFCIs)

An arc fault is a dangerous electrical problem caused by damaged, overheated, or stressed electrical wiring or devices. Arcing faults are one of the major causes of the more than 51,000 electrical fires that occur each year in the United States.

Arc fault circuit interrupters, or AFCIs, are devices that replace standard circuit breakers in your home's electrical service panel. AFCIs provide a higher level of electrical fire protection, detecting hazardous arcing conditions and shutting down the electricity before a fire can start.

While AFCIs were originally only required to protect bedroom circuits, the *2011 National Electrical Code (NEC)* requires that this technology be installed in additional areas of the home, including dining rooms and living rooms. Although the new safety requirements apply to newly constructed homes, older homes with aging wiring systems can also benefit from the added protection provided by AFCIs.

AFCIs should only be installed or replaced by a licensed, qualified electrician. Test AFCIs monthly to make sure they are in proper working order.



Ground Fault Circuit Interrupters (GFCIs)

A ground fault circuit interrupter (GFCI) is a device designed to protect people from electric shock and electrocution. A GFCI constantly monitors electricity flowing in a circuit. If it senses any loss of current, it quickly switches off power to that circuit. Installing GFCIs could prevent over two-thirds of electrocutions that occur each year in and around the home.

GFCIs can be installed at the main service panel, in place of standard electrical outlets, or can be used as a portable device. Typically, GFCIs are installed in areas where water and electricity are in close proximity, such as the bathroom, garage, kitchen, and basement.

Portable GFCIs require no tools to install and provide flexibility in using receptacles that are not GFCI-protected. They are commonly used outdoors.

GFCIs can be damaged or wear out as a result of voltage surges from lightning, utility switching or normal usage. Just because an outlet works does not mean that the GFCI is functioning properly. GFCIs should be tested monthly to ensure they are in working condition.



Tamper Resistant Receptacles (TRRs)

Every year in the United States, more than 2,400 children under ten years old are treated in hospital emergency rooms for electric shock or burns caused by tampering with a wall outlet around the home.

Tamper resistant receptacle (TRR) technology provides a simple, permanent solution to help prevent these childhood injuries. TRRs replace standard wall outlets and may appear identical on the outside, but they are designed with spring-loaded receptacle cover plates that close off the receptacle openings or slots. When equal pressure is simultaneously applied to both sides the receptacle cover plates open, allowing a standard plug to make contact with the receptacle contact points. Without this simultaneous pressure, the cover plates remain closed to prevent children from inserting household items.

Tamper resistant receptacles have proven to be so effective that the *2011 National Electrical Code (NEC)* requires installation of TRRs in all new homes. Standard outlets in existing homes can easily be replaced with TRRs. TRRs should be installed by a licensed, qualified electrician using the same installation guidelines that apply to standard receptacles.



Carbon Monoxide (CO) Alarms

Carbon monoxide (CO) is a poisonous gas that can be created by fuel-burning heating and cooking appliances, portable generators, water heaters, clothes dryers, or cars left running in enclosed areas. This odorless, colorless, tasteless gas is often called the “silent killer” because it is virtually undetectable without the use of technology, like a CO alarm.

CO alarms should be installed on every level of your home and outside each sleeping area. Test CO alarms at least once a month by pressing the TEST button. CO alarm batteries should be replaced in accordance with the manufacturer’s instructions, at least once a year. If an alarm “chirps” or “beeps” to indicate low batteries, they should be replaced immediately.



Smoke Alarms

Smoke alarms save lives by providing early warning of fire. Roughly two-thirds of home fire deaths occur in homes without working smoke alarms.

Smoke alarms should be installed in every bedroom, outside each sleeping area, and on every level of the home.

Newer smoke alarm technologies provide greater levels of protection than ever before. Combination alarms with ionization and photoelectric sensors respond to both flaming and smoldering fires. Interconnected alarms offer the best protection. They all sound if one sounds. Battery-operated alarms can now be connected by wireless technology.

Test smoke alarms monthly by pushing the TEST button. Change smoke alarm batteries at least once a year. If an alarm “chirps” or “beeps” to indicate low batteries, change them right away. Replace all smoke alarms at least every 10 years.