

Consumer Product Safety Commission

Preventing Home Fires: Arc Fault Circuit Interrupters (AFCIs)

Problems in home wiring, like arcing and sparking, are associated with more than 40,000 home fires each year. These fires claim over 350 lives and injure 1,400 victims annually.

A new electrical safety device for homes, called an arc fault circuit interrupter or AFCI, is expected to provide enhanced protection from fires resulting from these unsafe home wiring conditions.

Typical household fuses and circuit breakers do not respond to early arcing and sparking conditions in home wiring. By the time a fuse or circuit breaker opens a circuit to defuse these conditions, a fire may already have begun.

Several years ago, a CPSC study identified arc fault detection as a promising new technology. Since then, CPSC electrical engineers have tested the new AFCIs on the market and found these products to be effective.

Requiring AFCIs

AFCIs are already recognized for their effectiveness in preventing fires. The most recent edition of the National Electrical Code, the widely-adopted model code for electrical wiring, will require AFCIs for bedroom circuits in new residential construction, effective January 2002.

Future editions of the code, which is updated every three years, could expand coverage.

AFCIs vs. GFCIs

AFCIs should not be confused with ground fault circuit interrupters or GFCIs. The popular GFCI devices are designed to provide protection from the serious consequences of electric shock.

While both AFCIs and GFCIs are important safety devices, they have different functions. AFCIs are intended to address fire hazards; GFCIs address shock hazards. Combination devices that include both AFCI and GFCI protection in one unit will become available soon.

AFCIs can be installed in any 15 or 20-ampere branch circuit in homes today and are currently available as circuit breakers with built-in AFCI features. In the near future, other types of devices with AFCI protection will be available.

Should You Install AFCIs?

You may want to consider adding AFCI protection for both new and existing homes. Older homes with ordinary circuit breakers especially may benefit from the added protection against the arcing faults that can occur in aging wiring systems.

For more information about AFCIs, contact an electrical supply store, an electrician, or the manufacturer of the circuit breakers already installed in your home. Sometimes these components can be replaced with AFCIs in the existing electrical panel box.

Be sure to have a qualified electrician install AFCIs; do not attempt this work yourself. The installation involves working within electrical panel boxes that are usually electrically live, even with the main circuit breakers turned off.

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