Arc-Fault Circuit-Interrupter (AFCI) Protection for Dwellings

2013 California Electrical Code, Article 210.12

Arc-Fault Circuit-Interrupter (AFCI) Protection is required in the majority of branch circuits throughout the house:

All 120 volt, 15 and 20 amp branch circuits supplying outlets (lighting and receptacles) installed in dwelling unit family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms or areas shall be protected by a listed arc-fault circuit interrupter, or combination-type, installed to provide protection of the branch circuits. Lighting circuits in kitchens, bathrooms and laundry rooms will need to be arc-fault protected.

New, altered or replaced panel boards (sub panels) and service panels will require the over-current protection devices (circuit breakers) for the above branch circuits to be replaced with AFCI circuit breakers.

Conventional circuit breakers only respond to overloads and short circuits; so they do not protect against arcing conditions that produce erratic current flow. An AFCI is selective so that normal arcs do not cause it to trip.

Arcing faults often occur in damaged or deteriorated wires and cords. Some causes of damaged and deteriorated wiring include puncturing of wire insulation from picture hanging or cable staples, poorly installed outlets or switches, cords caught in doors or under furniture, furniture pushed against plugs in an outlet, natural aging, and cord exposure to heat vents and sunlight.

Ground-Fault Circuit-Interrupter (GFCI) Protection:

Ground-fault circuit-interrupters are required to protect the receptacles in bathrooms, garages, outdoors, kitchens and laundry rooms. GFCI receptacles can be used on an arc-fault protected circuit. Refer to the 2013 California Electrical Code Article 210.8 for more information on GFCI protection

Tamper-Resistant Receptacle:

In addition to the arc-fault requirements, all new and replaced 120 volt, 15 and 20 amp receptacles in and around dwelling units will need to be the tamper-resistant type. Refer to the 2013 California Electrical Code Article 406.12.

Tamper-resistant (TR) receptacles have spring-loaded shutters that close off the contact openings, or slots, of the receptacles. When a plug is inserted into the receptacle, both springs are compressed and the shutters then open, allowing for the metal prongs to make contact to create an electrical circuit. Because both springs must be compressed at the same time, the shutters do not open when a child attempts to insert an object into only one contact opening, and there is no contact with electricity. Tamper- resistant receptacles are an important next step to making the home a safer place for children.

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