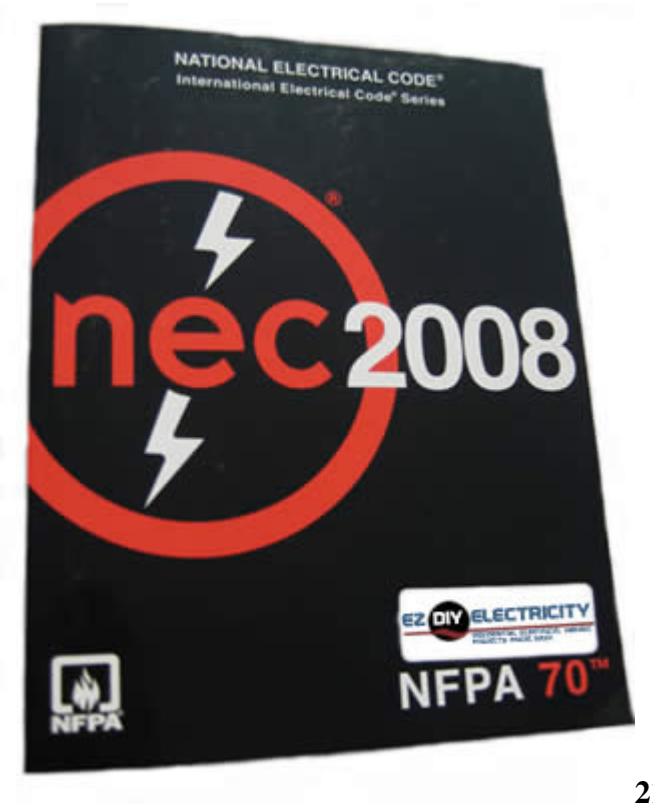
Three Changes in the 2008 National Electrical Code That Will Drastically Affect Homeowners & Builders With Their Next Electrical Wiring Projects



210.12(B) Arc-Fault Circuit-Interrupter Protection (AFCI). Dwelling Units.

Probably the most important change in the 2008 National Electrical Code® (NEC®)is that Arc-Fault Circuit Interruption (AFCI) Protection is now required for all 120-volt, single phase, 15- and 20 ampere branch circuits installed in most areas of your home. The requirements which applied only to bedrooms in 2005 have been extended to every habitable area of the house in 2008.

Arc-fault circuit interrupter protection is required in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sun rooms, recreation rooms, closets, hallways or similar rooms or areas.

AFCIs will not be required in bathrooms, kitchens, laundry rooms, unfinished basements, garages, attics or outdoors.

More than 20,000,000 arc-fault circuit interrupter devices have been installed to protect branch circuits in residential bedrooms since they were first required in 2005. The electrical loads in the other areas of a house where AFCIs are now required are similar to the electrical loads in a bedroom. Bathroom, kitchen, garage and outdoor receptacle outlets supply different types of electrical loads. In 2008, AFCI protection is not required in areas of a home where electrical loads may have different characteristics than bedroom loads. AFCI protection is only required in those areas of a dwelling with the types of loads that have a proven track record of being compatible with AFCI protection.

In locations where arc-fault protection is required in dwelling units, the entire branch circuit must be protected. That means all the branch circuit wiring from the panelboard to the last outlet on the circuit must be protected, because any of that wiring is subject to arcing faults.

Exception No. 1 permits a combination type AFCI device (receptacle) to be installed as the first outlet in the branch circuit, which provides protection for the remaining portion of the branch circuit. This leaves the homerun wiring between the panelboard and the first outlet without AFCI protection. If Exception No. 1 is used, and AFCI protection starts at the first outlet, the homerun wiring must be installed in metal conduit or cable, Type RMC, IMC, EMT or Type AC cable. Type MC cable is not permitted because the walls of Type MC cable are thinner than the walls of Type AC cable. All these wiring methods meet the requirements for equipment grounding conductors in 250.118. Metal boxes are also required.

The 2005 NEC® permitted the AFCI device to be located outside the panelboard, but it had to be installed within 6 ft. of the branch circuit overcurrent device. The 6 ft. limit from the panelboard to the first AFCI device has been eliminated in 2008, and a combination AFCI device can be installed as the first outlet on the branch circuit at any distance from the panelboard as long as the homerun is installed in one of the metallic wiring methods described in the exception.