

New Electrical Safety Requirement: AFCI Protection for Replacement Outlets

January 7th, 2014 | [6 comments](#)

The 2011 National Electric Code has an important little note at the end of section 406.4(D)(4) which just took effect January 1st, 2014. The exact text from this section is shown below:

(4) Arc-Fault Circuit-Interrupter Protection. *Where a receptacle outlet is supplied by a branch circuit that requires arc-fault circuit interrupter protection as specified elsewhere in this Code, a replacement receptacle at this outlet shall be one of the following:*

1. *A listed outlet branch circuit type arc-fault circuit interrupter receptacle.*
2. *A receptacle protected by a listed outlet branch circuit type arc-fault circuit interrupter type receptacle.*
3. *A receptacle protected by a listed combination type arc-fault circuit interrupter type circuit breaker.*

This requirement becomes effective January 1, 2014.

This section requires that all *replacement* receptacles be arc-fault circuit interrupter (AFCI) protected. This means that if you're replacing an old outlet in an old home in a location that needs AFCI protection in a *new* home, the replacement outlet needs to be AFCI protected.

What's an AFCI device? In short, it's an electrical safety device designed to prevent fires. It looks and acts a lot like a GFCI device in that it has a test button and a reset method, but GFCI devices are designed to prevent people from getting electrocuted, not prevent fires. For an excellent document explaining the functionality of AFCIs as well as the history of these devices, click here: [AFCIs Come of Age](#).



To paraphrase the exact code text, there are three ways to achieve compliance with this new requirement:

1. Replace the outlet with an AFCI outlet. AFCI outlets look almost identical to GFCI outlets.
2. Install an AFCI outlet upstream from the new outlet. AFCI outlets can protect outlets wired downstream from them.

3. Add AFCI protection to the entire circuit, using an AFCI circuit breaker. This is fairly easy to do in modern electric panels, but it's not possible with fuse panels and many older circuit breaker panels.

AFCI protection is currently required for all 15 and 20 amp branch circuits providing power to outlets* in residential family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, and similar rooms or areas. Once the 2014 NEC is adopted, both outlets *and devices* in these locations will need AFCI protection, and list will be expanded to include kitchens and laundry areas.

* An "outlet" is defined in the NEC as "A point on the wiring system at which current is taken to supply utilization equipment." This might mean a light, a smoke alarm, or a 'receptacle'. A receptacle is what normal people call an outlet.

With this new requirement now in effect, I'm guessing the demand for AFCI outlets is going to skyrocket. Home Depot sells [AFCI outlets](#) for under \$30, but they currently only have white. For more info on AFCI outlets from Leviton, click here: [Leviton AFCI Outlets](#).

Special thanks to Doug Olson at the Richfield Home Depot Pro-Desk for letting me know about this code section that just took effect.

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