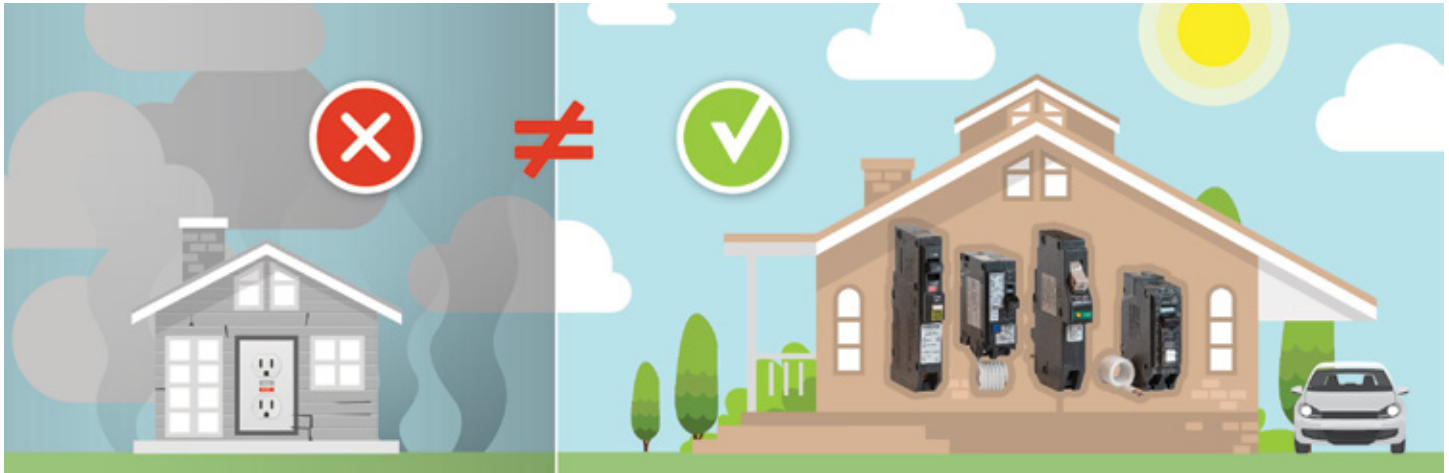


Do You Know The Code?

Outlet AFCIs and Home Runs... A Fact Check



Did you know that there are only six approved ways provide AFCI protection on a circuit? Only two of them allow outlet AFCI's (OBC) to be used on a home run circuit in new construction, but they require special insulation of that wiring in either metal enclosed wiring or 2" of concrete. Yes...concrete.



Did you know that there are only six approved ways provide AFCI protection on a circuit? Five of them deal with outlet AFCIs (OBCs), but only two are practical. Those two require special insulation of the wiring in either conduit, armored cable, or 2" of concrete. Yes...concrete.

You know why?

Because outlet type AFCI's have not passed a critical test in UL 1699 that is required of Dual Function and AFCI circuit breakers. Also, outlet type AFCIs cannot fully protect the home run from parallel arcing faults UPSTREAM like AFCI circuit breakers.

This leaves up to 30% of every new home at risk should a parallel arcing condition occur if you install AFCI outlets in the home run without metal enclosed wiring or 2" of concrete.

Don't endanger lives by circumventing the electrical code requirement.

The AFCI outlet manufacturers quote chapter and verse the electrical code as it was passed in 2017 making it sound like their products are approved for new construction....but only if you protect in metal or concrete - which some fail to mention.

Is that worth the trouble, material and labor expense when an AFCI Breaker covers the whole circuit and everything downstream?

Don't be fooled by their promotional gimmicks. While approved for existing homes that do not have AFCI circuit protection in the load center for downstream protection, outlet AFCI's do not have the protection ability of AFCI or Dual Function (AFCI and GFCI in one device) Circuit Breakers located in the circuit breaker panel.

Six NEC Approved Methods of AFCI Circuit Protection*



Actual wall fire in test lab caused by an Outlet AFCI failing to trip a standard circuit breaker to close the circuit in a UL1699 test

*2017 National Electrical Code (NEC)

- Combination AFCI Circuit Breaker
- Branch Feeder type AFCI plus AFCI receptacle
- Listed Supplemental Arc Protection Circuit Breaker
 - » No product combination is on the market plus AFCI Receptacle and there is no UL standard to test against for this classification.
 - » No standard circuit breaker can protect the home run from arcing faults. – That is why UL1699 test was created. Any product protecting the home run should test to this standard.
- Listed system combination
 - » No product combination currently exists in the market
- Non-metallic encased in no less than 2" of concrete with standard circuit breaker and AFCI receptacle (OBC)
- Using RMC/IMC/EMT or steel armored type AC cables with standard circuit breaker and AFCI outlet (OBC)



Learn more at www.acbma.org

Check the “fine print” on their promotional material

One OBC manufacturer states:

“Requires listing Nationally Recognized Testing Laboratory (NRTL – i.e. UL). Standard for listing expected in 2014. Always check with your local inspector or AHJ (Authority Having Jurisdiction for any questions on current local code requirements. DF or arc fault receptacles offer a NEC compliant solution in RESIDENTIAL KITCHEN AND LAUNDRY AREAS FOR NEW CONSTRUCTION, MODIFICATION”

This phrase does not provide any guidance to an electrical contractor. Basically no OBC manufacturer can provide a combination that passes UL1699 so they are referring you to your local code authority who would not know anything about the system listed combination. This is a confusion tactic to make it appear as a legitimate installation method in new construction. It's not.

Outlet AFCI Manufacturers claim that AFCI outlets in combination with a standard circuit breaker are ok to use and less expensive. Is it really? Let's look at some facts.

Saves Money....

The OBC manufacturers claim that their OBC AFCI saves money as compared to AFCI or Dual Function circuit breakers. The only way you can save money is by making a non-code compliant installation. That means, you're skipping the safety component required by the code. The time and money to install the conduit, concrete or armored cable. That is truly not a cheaper alternative? It's less safe for the homeowner, Oh...and about their warranty...it's only 5 years and circuit breakers are lifetime...

Minimizes Inventory...

You need circuit breakers but you don't need AFCI receptacles if you use AFCI breakers or Dual Function Circuit Breakers. With Dual Function Circuit breakers you don't even need GFCI outlets! You can just install standard outlet receptacles and reduce your inventory as your circuit breakers can protect the entire circuit. No need for two or three devices. Now that's a real savings...

Easier To Install...

Circuit breakers are the simplest to install today as compared to OBC's. To meet the code, you need to protect the home run. Using an OBC AFCI at the first outlet requires you to install armored cabling for the home run, conduit or concrete. That is time consuming and costs more money. An AFCI or Dual Function circuit breaker provides up to four safety functions in one package, eliminating the need for the OBC AFCI/GFCI.

AFCI receptacles are harder to install than standard receptacles. Every electrician knows how hard it is to squeeze all that wire into the small outlet box. You have to exactly measure the wire to minimize fold back; you can accidentally break the wire feed if you install improperly – causing rework. Simplify your installation by using a AFCI or Dual function circuit breakers and remove the wiring headache.



The NEC requires metal enclosed wiring if you use OBC AFCIs on the home run.



AFCI/GFCI outlets are harder to install than standard outlets. Eliminate them by using Dual Function Circuit Breakers.

Shortcuts endanger homeowners. Don't reduce safety by not following the electrical code. It's there for the homeowner's protection.



Learn more at www.acbma.org

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