

What is Arc fault protection?

In the recent 23 edition of the Canadian electrical code book, there has been a lot of changes that you will need to know about when dealing with renovation projects. The biggest change is rule 26-724 (f) that states as follows "Each branch circuit supplying 125V receptacles rated 20A or less shall be protected by a combination-type arc-fault circuit interrupter, except for...". What this means is that if you install a new receptacle or plug such as a microwave outlet in the cabinet above the stove, a built in vacuum cleaner outlet in the basement or rec room wall outlets, you are now required to provide arc-fault protection for the receptacle. This can be accomplished in 2 ways, with an arc fault breaker installed in the electrical panel or by installing an arc-fault receptacle as the first device in the circuit.



Problems arise with each of the aforementioned methods. In the case of installing an arc fault breaker in the existing panel, you may not be able to get a matching manufacturer's breaker. For instance, in the older homes with Bull Dog pushmatic panels, these have not been made since the mid 1950s and back then there was no such thing as arc-fault protection. More recent panels (mid 1970s, Nova or Wesco) have also not been made for many years. Today's manufacturers like Siemens, Square "D", Cutler Hammer and Schneider all make arc fault breakers for their panels. Make sure you match the same manufacturer for both parts. Some electricians will tell you that some manufacturers will fit into competitors brand panels and that you can use them in place of the original. Recently there has been 2 documented fires in panels because competitors breakers were installed. If you have a situation where installing an arc-fault breaker in the existing panel is not an option, the second method may be used.

When you install an arc fault breaker or receptacle into a circuit, everything after it in the circuit is protected, everything before it is not. Let me clarify this. If you have a rumpas room with 5 wall plugs installed one after the other, and you install an arc-fault receptacle in the 3rd one, the 3rd, 4th and 5th are protected by the new receptacle but not the 1st or 2nd. That's just the way the technology is made.

Rule 26-724(g) states that if a arc-fault receptacle is installed as the first device in the circuit, the wiring between the panel and this first device must be "metal raceway, armoured cable or non-metallic conduit or tubing". Because of this we normally will install an arc-fault receptacle beside the electric panel using one of the above wiring methods, then continue on from there to the rest of the circuit. That way everything on that circuit is protected.

"Except for..." Here are the exemptions to the rule as stated in 26-724 (f)(1)(2). If you are putting in a sump pump, you do not need to provide arc fault protection. If you are renovating your kitchen, the 2 items that do not need arc-fault protection are the refrigerator and the counter/island/peninsula receptacles. And finally a new bathroom GFI. Remember the new code applies to newly installed receptacles only. The existing are grandfathered and you do not have to change them. Always get or demand from our contractor, an electrical permit and inspection from the city issuing the permit. It's a matter of your family's safety.