

Which is better -- Fuses or Circuit Breakers?

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In some ways, the old fashioned fuse is actually better than the circuit breakers. To make sure I got my facts right on this one I visited George Brown College in Toronto to talk to one of the instructors in the electrician's apprentice programs.

Fuses are 100 % reliable. When they get hot, the little metal strip inside burns and the electricity stops. The down side to fuses is that occupants have to keep buying new fuses and change them themselves. This often leads to putting in fuses that carry a larger load than that electrical circuit was designed to carry. Of course you don't have to replace the fuse any more, but you may be overheating the wires in the wall and creating a fire hazard. You can get 'fuse rejecters: little plastic disks that will allow only fuses of the proper amperage or smaller to be used in a specific fuse socket as you see in the second photo above. Larger fuses simply won't fit in. The use of fuse rejecters actually removes the primary technical drawback to fuses -- although they are still more work for homeowners.

Circuit breakers are mechanical devices, built to various degrees of quality, and are subject to mechanical failure. They all have the possibility of failure, some brands more than others. So, although they do generally protect your house, they do not have the same 100% reliability rating of the old fuses. Of course they have the advantage that you don't have to change them when they trip, you simply flip the switch. In addition you can get specialized circuit breakers that provide special safety features such as Ground Fault Interrupters or Arc Fault Interrupters. Some fuses are re-set type fuses, meaning that they have a mechanism inside as well, and hence are subject to the same possibility of failure as a circuit breaker.

The recommendation from George Brown College was to trip the switch on your circuit breakers once a month to increase their reliability. Making the mechanism move helps to keep them clean in a dirty environment and does some self lubrication. In industry, where they came from, they are always flipped regularly. Most of you have never touched a circuit breaker that didn't trip by itself. In fact tripping all the circuit breakers will mess up all your clocks so I recommend a practical maintenance schedule of tripping every breaker in your panel twice a year -- when you change the clocks anyway. So when Daylight Savings comes or goes, flip every circuit breaker in the house -- and while you are at it, replace those smoke and CO detector batteries.

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