



Know the code: AFCI safety updates.

In 2015, Canadian Electrical Code (CEC) regulations around the use of Arc Fault Circuit Interrupters changed, with potentially life saving results. Protect your customers and their homes from the dangers of electrical fires caused by arc faults. Learn more about 2015 CEC changes with advice from Westburne and the experts at Eaton.



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This is Jeff.

He started working for Rexel, Westburne's parent company, back when Brian Mulroney was Canada's Prime Minister and the top box office hit was *Thelma & Louise*. In the two-and-a-half decades since, Jeff has learned a lot about the electrical supply business and the customers it serves.

Today, as a Commercial Account Manager for Westburne, Jeff brings that 25-year experience to every customer, drawing on extensive knowledge of electrical products and industries to ensure clients get the supplies and service they need.

Over the years, Jeff has also learned that every customer is different and he prides himself on taking time to learn about them. You can't know what the customer needs if you don't listen, he says.

Jeff works hard to earn a reputation as a trusted source of information. He knows trust is important to his customers. That's why he's happy to provide customers products and information from a vendor he trusts – Eaton.

He's here to help.

JEFF KNIGHT
COMMERCIAL ACCOUNT MANAGER
WESTBURNE \ THOMPSON REGION





For safety's sake: know the code.

WHAT

Canadian Electrical Code regulations regarding the use of arc fault protection products in residential applications have changed. Inform yourself and protect your customers against the dangers of electrical arc faults.

WHY

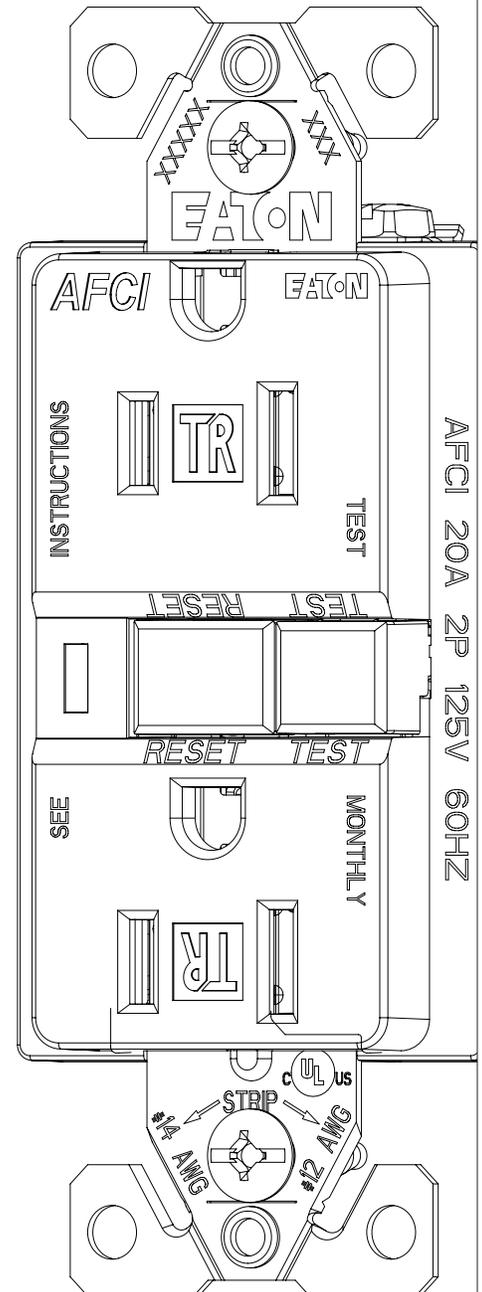
We can do better.

Canadian Electrical Code regulations on Arc Fault Circuit Interrupters have been saving lives and protecting property since rules were first introduced in 2002. Before that, arc faults – electrical arc malfunctions that create excessive heat – were a major cause of residential fires. Damages due to arc faults have decreased, but there's room for improvement. New research and advances to technology have resulted in updates to the electrical code regarding AFCIs that will make residences even safer.

HOW

Westburne can help.

Westburne is an authorized distributor of Eaton electrical products, including 2015 Canadian Electrical Code approved breakers and receptacles. Our in-house electrical expertise and our partnership with respected vendors like Eaton mean we have the products and information to help keep you up to code.



ARC FAULTS

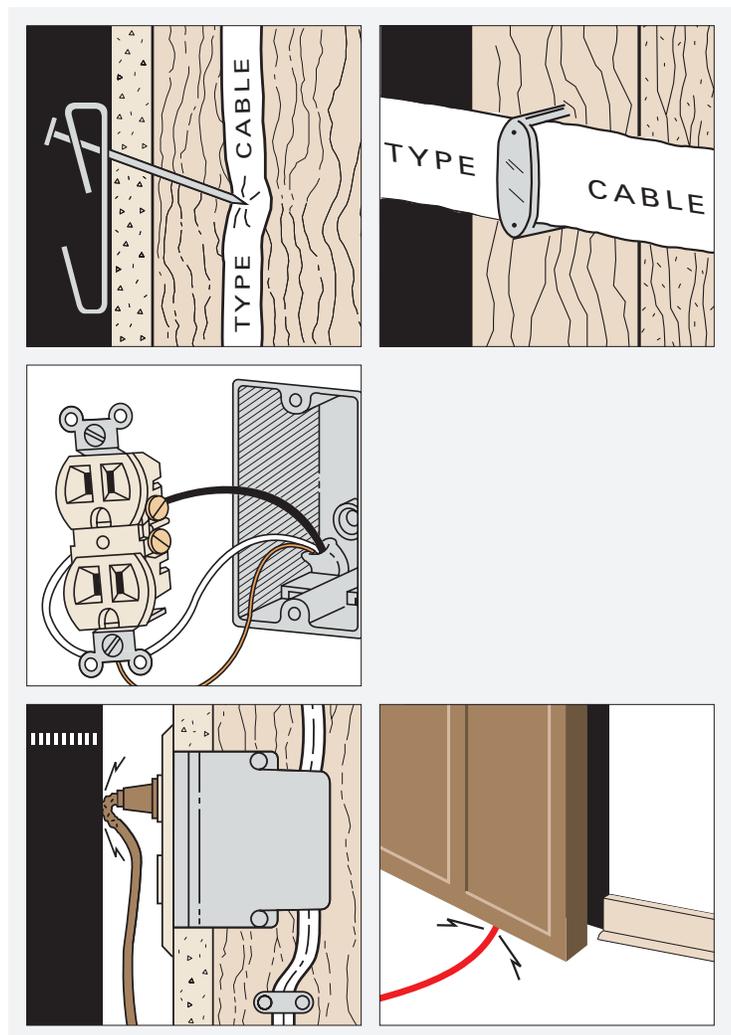
There are two types of electrical arcing. Natural arcing happens safely each time you turn on a light, vacuum or any other motor-driven piece of equipment.

An arc fault happens when an electrical current flows through an unplanned path, such as damaged electrical wire insulation. When this happens, it can create temperatures up to several thousand degrees centigrade and ignite nearby materials.



Causes of arc faults include:

- 1 **Arcing in installed electrical wiring caused by damage from:**
 - › Wires accidentally punctured by nails or screws
 - › Cables stapled too tightly against wall studs
 - › Animals and vermin chewing through wiring insulation
 - › Heat, humidity and voltage stress
- 2 **Arcing at loose connections or joints in the circuit or at outlets**
- 3 **Arcing in appliance or extension cords**
 - › Bent or crimped cords
 - › Brittle or aged cords
 - › Cords under or behind furniture



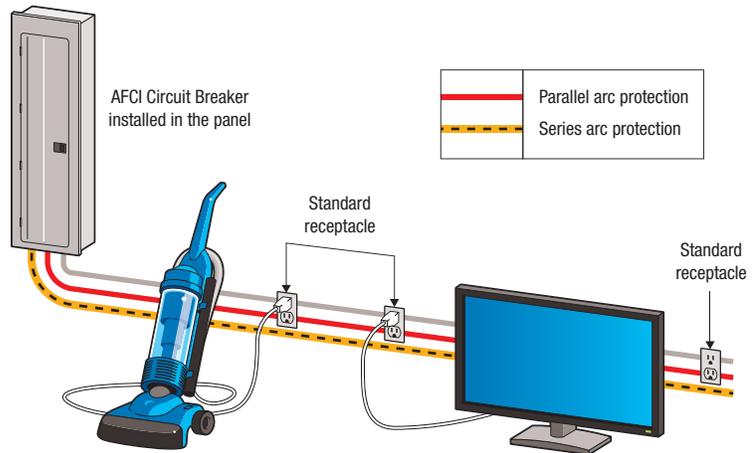


Arc-fault circuit interrupters (AFCIs).

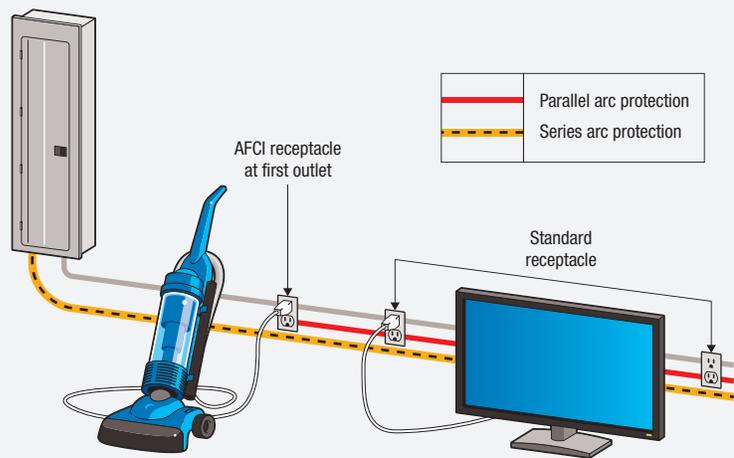
AFCIs prevent fires by continuously monitoring the current, distinguishing between natural, harmless arcs, like those that happen in switches, and potentially dangerous arcs, such as those caused by a damaged electrical cord. When a dangerous arc occurs, the AFCI immediately trips the breaker to the circuit, which disconnects the power and prevents a potential electrical fire.

Types of AFCIs

Combination AFCI circuit breaker: protects the entire circuit by guarding against parallel arcing (line to neutral), series arcing (a loose, broken, or otherwise high resistance segment in a single line), ground arcing (from line, or neutral, to ground), overload protection and short circuit protection.



Outlet Branch-Circuit AFCI receptacle: an alternative to breakers that offer localized TEST and RESET buttons on the face of the device. Designed to detect both series and parallel arcing conditions. Will not protect against parallel arcing upstream of the device as the current path does not flow through the AFCI.





THE EVOLUTION OF A CODE

Regulations around the use of AFCIs have evolved. Since 2002, Canadian industry standards for arc fault technology have been saving lives and protecting property. [Here are the 2015 changes to the Canadian Electrical Code related to AFCIs.](#)



Understanding 2015 Canadian Electrical Code provisions

The Canadian Electrical Code now states that arc fault circuit protection is required in 125Vac, 15A and 20A circuits supplying receptacles throughout the home (with the exception of those outlined in the 2015 CE Code).

Canadian Electrical Code Rule 26-724(f)

This rule states that all branch circuits in dwelling units supplying 125V receptacles rated 20A or less must be protected by a combination-type AFCI.

Exception:

- › branch circuits supplying receptacles installed in accordance with Rules 26-710 (f) and 26-712(d) (i), (iii), (iv) and (v)
- › branch circuits supplying only one receptacle for the connection of a cord-connected sump pump, are exempt from the requirement for arc fault protection

Canadian Electrical Code Rule 26-720

This rule defines a combination-type AFCI as a device that provides both series and parallel arc fault protection against dangerous arcing to the entire branch circuit wiring, including cord sets and power supply cords connected to the outlets.

This rule also defines an Outlet Branch-Circuit AFCI as a device that provides both series and parallel arc fault protection against dangerous arcing to downstream branch circuit wiring, cord sets, and power supply cords and also provides series arc fault protection to upstream branch circuit wiring.



The Canadian Electrical Code manual can be purchased online at <http://shop.csa.ca>

Remember that enforcement and interpretation of the code is up to the discretion of the local inspection authority having jurisdiction.



Canadian Electrical Code Rule 26-724 (g)

This new rule permits the use of an Outlet Branch-Circuit AFCI instead of the Combination AFCI circuit breaker type required with Rule 26-724 (f), provided that the Outlet Branch-Circuit AFCI is installed at the first outlet on the branch circuit. Because the receptacle AFCI does not provide parallel arc fault protection to the upstream branch circuit wiring, additional mechanical protection is required. The wiring method for the portion of the branch circuit between the branch-circuit over current device and the first outlet must be comprised of metal raceway, armored cable, or non-metallic conduit or tubing. This will minimize the risk of direct contact and damage to the circuit conductors that could cause arcing and ignition, and to localize the flames should ignition occur.

Why AFCIs matter.

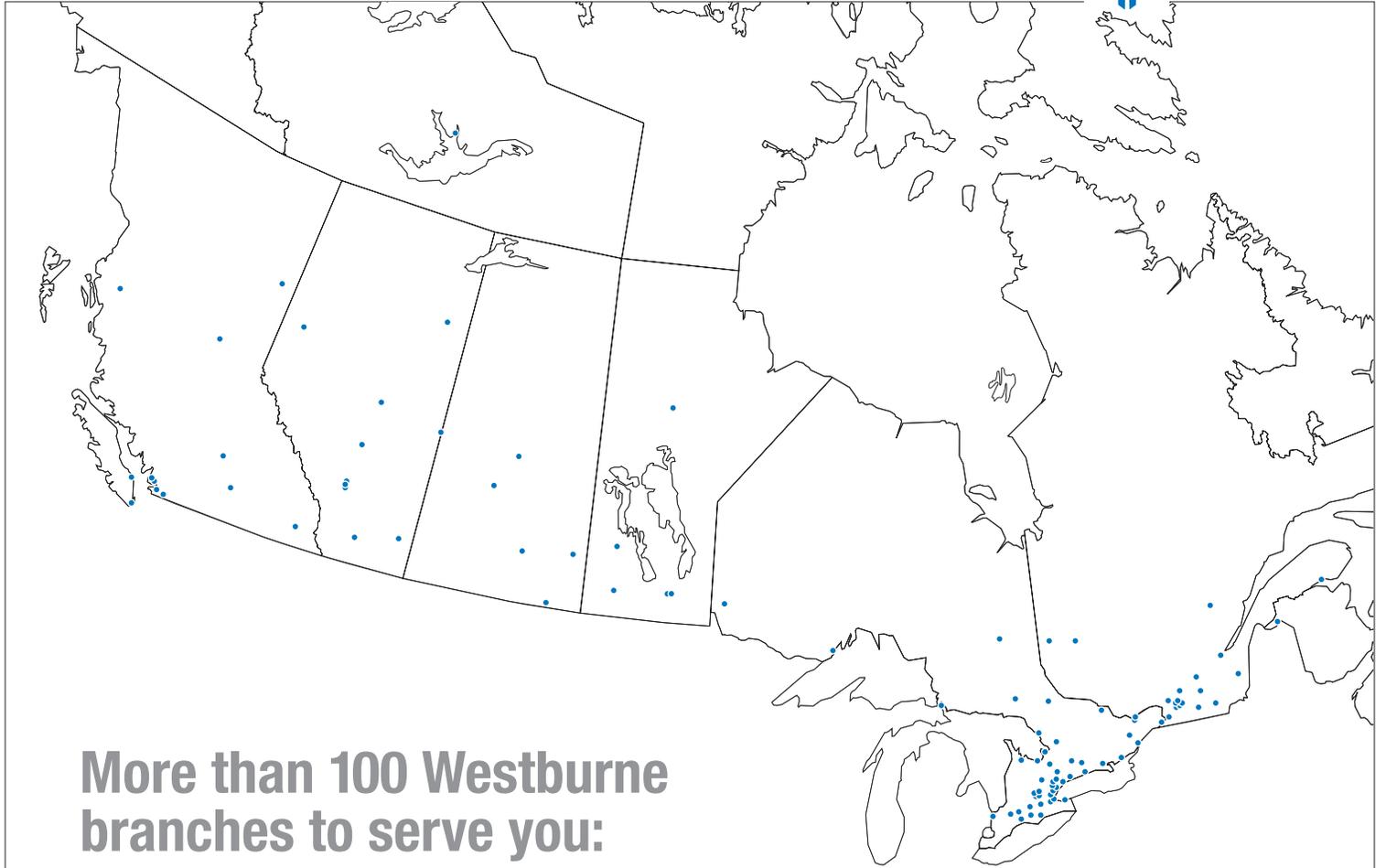
In 2011, the Council of Canadian Fire Marshals and Fire Commissioners completed a study of Canadian fire statistics to determine the scope and impact of electrical fires. Focusing on the most recent numbers (2007), they found:

- › **1350 residential electrical fires**
- › **15 deaths**
- › **89 injuries**
- › **\$83M in property damage**
- › **Over half (53%) of all the home fire deaths were caused by fires that started in the living room or a bedroom**

A recent study by Ontario's Electrical Safety Authority and the Ontario Fire Marshal looking at Ontario fire data from 2000-2011 found that properly installed AFCIs could have prevented:

- › **6183 residential electrical fires (71% of all electrical fires)**
- › **\$291.4 million in property damage**
- › **469 injuries**





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