# DEFECT OF THE MONTH

## January 2016

## 26-722 Branch circuits for dwelling units

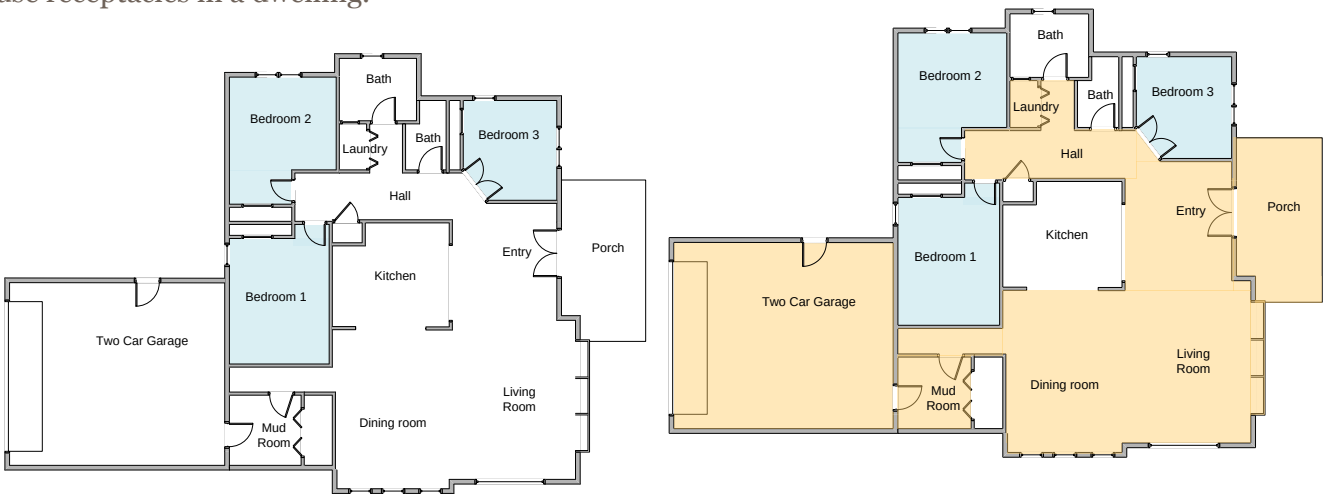
Over the past year, ESA inspectors have identified more than 1,400 defects related to the requirement for arc fault protection of receptacles. Arc faults are a leading cause of fires in homes. In fact, reports estimate that 50 to 75 per cent of all electrical house fires in the United States are caused by arc fault conditions.*[1,2] Arcing can occur in milliseconds or over decades prior to a fire developing, due to factors such as current level or duration.

Arc Fault Circuit Interrupters (AFCIs) have been required for circuits feeding electrical receptacles in sleeping facilities since the 2002 Ontario Electrical Safety Code (Code).

AFCI protection is selective and protects against arcing conditions that produce erratic and often reduced current. Conventional circuit breakers only respond to overloads and short circuits; AFCI breakers de-energize a circuit when an abnormal electrical arc is detected. They can distinguish between harmless arcs that occur as a result of the normal operation of switches, plugs and motors, and undesirable arcs from a damaged lamp cord, for example, or deteriorated electrical infrastructure.

## 26-722 Branch circuits for dwelling units

Currently, the Ontario Electrical Safety Code requires that branch circuits supplying receptacles in sleeping facilities of a dwelling shall be protected by an arc-fault circuit interrupter. In the new 2015 edition of the Code, the requirement for arc fault protection will include most general use receptacles in a dwelling.




2012 Code: AFCI Protective Requirements

2015 Code: AFCI Protective Requirements

1. *On the Safety Circuit: A Fact Sheet on Home Electrical Fire Prevention United States Fire Administration (2006).*
2. *Oct.1, 2002 CPSC–NFPA Technical Committee Document Proposal Form.*