

Bulletin 26-29-3
Electrical replacement and/or alterations in dwelling units
Rules 26-654, 26-656, 26-704, 26-706, 26-708, 26-722 and 32-200

Issued May 2019
Supersedes Bulletin 26-29-2

Scope

- (1) Introduction
- (2) Arc Fault protection (AFCI)
- (3) Tamper Resistant (TR) Receptacles
- (4) Ground Fault Circuit Interrupters (GFCI)
- (5) Outdoor receptacle covers
- (6) Interconnection of smoke alarms between dwelling units

(1) Introduction

Questions about compliance with current code requirements have been identified where alterations and/or replacements are being made to existing installations in dwelling units. This bulletin has been developed for clarification and direction as to appropriate installation methods to meet inspection requirements.

(2) Arc fault protection (AFCI)

Although ESA strongly recommends improving safety by adding arc fault circuit protection for existing wiring, the following questions and answers have been provided for direction to meet inspection requirements. For more information on Arc fault circuit interrupters please see Bulletin 26-18-*

Question 1

When replacing knob and tube wiring or other ungrounded circuits to existing receptacle locations, are you required to install Arc Fault circuit protection?

Answer 1

Yes, when replacing branch circuit wiring to existing receptacles in a dwelling unit, the installation shall meet the minimum requirements of Rule 26-656 (protected by an AFCI).

Question 2

If one or more receptacles is added to an existing circuit and the existing branch circuit ahead of the new receptacles is not altered, are you required to install Arc Fault circuit protection on the extension of the branch circuit?

Answer 2

Yes. Arc fault protection is required for the extension of the branch circuit. An AFCI receptacle (or a dead front) is required to be installed at the first added receptacle on the extension of the circuit. Metal raceway, armoured cable, or non-metallic conduit or tubing shall not be required between the panel and the AFCI device.

This is also applicable to the addition of a new receptacle at the furnace (on an existing branch circuit) to plug in associated equipment (such as condensate pumps, humidifiers, etc.).

Note

ESA recommends that an AFCI breaker be installed on the circuit, or replace the existing first receptacle in the circuit with an AFCI receptacle.

Question 3

If a service or panel is replaced, relocated or upgraded and there are no receptacles added to the existing branch circuit wiring, is Arc Fault circuit protection required to be installed for the existing branch circuits?

Answer 3

No, when the service or panel is upgraded, relocated or replaced, AFCI protection does not need to be installed. The current Code requirement for AFCI protection does not retroactively apply to the existing branch circuit wiring unless the branch circuit is being extended with additional receptacles. See Question 2 of this Bulletin for direction when adding receptacles to existing branch circuits.

ESA recommends that arc fault circuit interrupter protection be provided for existing wiring.

Rationale 3

Notwithstanding the requirements of Rule 26-656, the existing circuits are not extended with receptacles as part of the installation (replaced, relocated or upgraded panel), and may contain a mix of receptacles as well as smoke and or carbon monoxide detectors, which are prohibited from being on a AFCI protected circuit (see note below). It would be very difficult to determine which, if any, existing branch circuits would meet the eligibility of 26-656.

Note:

In many older homes, a smoke detector may be connected to a branch circuit that also supplies other receptacles. Notwithstanding Rule 32-200 it shall be permitted for a smoke detector to be supplied by a branch circuit that is protected by an AFCI device when the smoke alarms have battery backup in compliance with the Ontario Building Code. Please refer to Bulletin 32-3-*

Question 4

If a small renovation is performed in a dwelling unit, complete with new branch circuit wiring, does the Code require arc fault circuit protection to be installed for the existing circuits, which have not been altered in any way?

Answer 4

No, the current Code requirement for AFCI protection is applied to the new branch circuits in the new additions only; AFCI protection is not required to be added to the existing wiring.

Question 5

For older style panels where Combination AFCI (CAFCI) breakers are not available, and only parallel Branch/Feeder type AFCI breakers are available, Is it permitted to use a Branch/Feeder AFCI Breaker and an OBC-AFCI receptacle at the first outlet of a circuit, to achieve branch circuit AFCI protection?

Answer 5

Yes, notwithstanding Rule 26-656 , it can be permitted to provide the required AFCI protection.

Note:

The existing wiring method between the breaker and the first receptacle (OBC-AFCI) does not have to consist of metal raceway, armoured cable, or non-metallic conduit or tubing

Rationale 5

The Branch/Feeder AFCI breaker will provide the parallel AFCI protection and the OBC-AFCI will provide series protection; therefore, the whole branch circuit is protected.

(3) Tamper Resistant (TR) Receptacles

ESA recommends the installation of tamper-resistant receptacles on existing installations especially in houses with children. Receptacles installed on new branch circuits shall comply with the current OESC requirements regarding tamper-resistant feature. The following questions and answers have been provided for clarification and direction as to appropriate application of Rule 26-706 when renovations and/or additions are being made to existing installations in dwelling units.

For more information on tamper resistant receptacle requirements, please see Bulletin 26-25-*

Question 6

When existing receptacles are replaced (i.e. Like for Like replacement), are the replacements required to be tamper resistant?

Answer 6

Yes, in accordance with Rule 26-706.

Rationale 6

Receptacles of CSA configuration 5-15R and 5-20R are readily available in the market with tamper resistant features and they shall be used when replacing existing 5-15R and 5-20R receptacles.

Note:

For receptacle replacement supplied by Aluminum wiring, please refer to bulletin 26-25-*

Question 7

When replacing knob and tube wiring or other ungrounded circuits to existing receptacle locations, are you required to replace existing receptacles with new tamper-resistant receptacles?

Answer 7

Yes, when replacing the existing branch circuit wiring, receptacles shall be replaced with grounded 3 pin type and meet the requirements of Rule 26-706 (be Tamper Resistance and so marked).

Question 8

If one or more receptacles are added to an existing circuit, are new receptacles required to be tamper resistant?

Answer 8

Yes, added receptacles are required to be tamper resistant and so marked. Note: Existing receptacles are recommended to be replaced to TR; however, it is not mandatory.

Question 9

If a small room/area is added to a dwelling unit, complete with new branch circuit wiring, does the Code require tamper-resistant receptacles to replace the existing receptacles?

Answer 9

No, the current OESC's requirement for receptacles with the tamper-resistant feature does not apply to the existing rooms wiring. Only the added receptacles are required to be tamper-resistant.

(4) Ground Fault Circuit Interrupters (GFCI)

Questions about GFCI requirements have been identified when replacing existing receptacles that were installed prior to the current GFCI requirements. The following questions & answers have been provided for clarification and direction as to when GFCI is required.

Question 10

When replacing an existing non-GFCI outdoor receptacle, is a GFCI protected receptacle required to be installed as the replacement?

Answer 10

Yes, Rule 26-722 requires receptacles installed outdoors and within 2.5 m of finished grade be protected with a ground fault circuit interrupter of the Class A type.

Question 11

When replacing an existing non-GFCI receptacle located in a bathroom or washroom, is a GFCI protected receptacle required to be installed as the replacement?

Answer 11

Yes, Rule 26-704 requires receptacles having CSA configuration 5-15R or 5-20R installed within 1.5 m of sinks (wash basins complete with drain pipe), bathtubs, or shower stalls to be protected by a GFCI of the Class A type.

Question 12

When replacing an existing non-GFCI split receptacle located in a kitchen, is a GFCI protected receptacle required to be installed as a replacement?

Answer 12

No. Notwithstanding Rule 26-704, GFCI protection shall not be required, as Split receptacles are not available with GFCI protection. However, it is recommended that split receptacles be replaced with GFCI protected receptacles, as per the Flash notice 16-28-FL. (<https://www.esasafe.com/contractors/flash-notice>)

(5) Outdoor receptacle covers

Question 13

When replacing an existing cover for an outdoor receptacle, is the new cover required to meet requirements of Rule 26-708?

Answer 13

Yes, when replacing an existing cover for an outdoor receptacle, requirement of Rule 26-708 needs to be met.

(6) Interconnection of smoke alarms between dwelling units

Background

The following is permitted only when an existing single dwelling unit is divided into not more than two dwelling units. An exemption in Ontario Building Code 2012 to reduce the fire rating between two dwelling units by interconnecting smoke alarms, created a conflict with Rule 26-654 a) of the OESC.

Rule 26-654 a) does not permit branch circuits from a panelboard installed in a dwelling unit to be connected to outlets or electrical equipment in any other dwelling unit, when the panelboards are installed in accordance with Rule 26-602.

Questions have arisen about other alternative interconnection methods to avoid non-compliance with Rule 26-724 a).

Direction

Notwithstanding Rule 26-654 a), it shall be permitted to supply the smoke alarm circuit for both dwellings from either panelboard, provided that:

1. The branch circuit overcurrent device (circuit breaker) is painted red and is clearly marked as supplying smoke alarms in both dwellings;
2. The panelboard that supplies the smoke alarm branch circuit (panelboard 1), is marked to indicate "Warning this panelboard supplies the smoke alarms in unit XX";
3. The panel within the dwelling that does not supply the smoke alarms (panelboard 2) shall be marked "Warning the smoke alarms in this dwelling unit are supplied from unit XY"; and
4. The interconnecting wiring between the two dwellings and the wiring for smoke alarms in the dwelling unit where panelboard 2 is located shall be metal raceway or armoured cable and painted red.

Note 1

When a panelboard in a common area, not within either dwelling, is available, the interconnected smoke alarms in each dwelling unit, and their associated lighting branch circuit shall be supplied from that panelboard and the branch circuit wiring is permitted to supply the smoke alarm circuit in both dwellings.

Note 2

The requirements of Rule 32-200, which requires smoke alarms be supplied from a lighting circuit, or from a circuit that supplies a mix of lighting and receptacles only, applies to the dwelling unit where the branch circuit originates.